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THE HOSPITAL PROBLEM *

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Progress in the development of hospitals, as an economic, beneficent factor in human experience, was painfully slow. During the long ages which produced the masterpieces of sculpture, of architecture and painting, and which gave to the world its splendid models of classic literature, the institution which to-day is foremost in making existence tolerable, and life sweeter for the afflicted was but a mockery. At every stage of progress, ancient, medieval and fairly modern, hospitals afford glaring and altogether pathetic examples of blind groping, hopeless indirection and wasted energy. Up to, and well past the middle of the last century, their best achievement was little more than an expression of the primitive, the pitiable, the grotesque. Universally deplored, they were shunned by the intelligent and became the final refuge of the helpless.

During the Revolutionary War, on the authority of the Surgeon-General of the American Army, Dr. Benjamin Rush, hospitals were more a menace than a benefaction. "They were the sinks of human life, having robbed the United States of more citizens than the sword."

Within the memory of many of us, hospitals of wide repute and proud tradition, presided over by men who knelt at this shrine of human endeavor, the master spirits of their day, formed a stage on which were enacted an endless series of tragedies.

Patiently, but hopelessly, a solution of the problem was sought. But the efforts of the church, powerful in organized ecclesiasticism, of governmental authority, with its open treasure house and tremendous interest in the welfare of its subjects, and of private beneficence, with its limitless zeal in the promotion of human happiness, were alike barren of results.

In the middle of the eighteenth century, Hogarth, inspired child of the Renaissance masters, seems to have had prophetic vision of future possibilities, when he placed beneath the roof of St. Bartholomew's, his world-famous fresco, "The Good Samaritan." This bit of color, the silent voice of imagery, was veritably the handwriting on the wall.

But light came not from the vatican or from the sanctuary; the crown exchanged its gold for ashes, and the dream of the artist was not realized until the test-tube and the microscope divulged their secret, and gave new meaning to the magic word *cleanness*.

Pasteur, working beyond the confines of medical science, became the law-giver. His researches ushered in a new era and cleared the way for him who made a new thing of surgery. Sir Joseph Lister, more than any other, rescued the hospital from reproach and made it what it is to-day, a necessity for the multitude, a luxury for the few, a blessing for all. Through his work the hospital at once became the chief unit in surgical technic, the birthplace and home of modern surgery, and it may be added, that from this time, surgery became the chief incentive and inspiration in hospital evolution. Few human interests have been more helpful; none have elicited more generous support.

The world's hospital system, as it exists to-day, justly holds a conspicuous place among social, economic and educational institutions.

Like every other institution, its units present many types and varying degrees of productiveness and of excellence. Society, altruistic always, though sometimes apathetic in its attitude toward hospitals, has a serious task to perform in encouraging the best, in fostering the less favored and in eliminating the unworthy. Fundamental faults, be they technical or ethical, are intolerable. Definite standards of morality and of efficiency should be established and rigidly adhered to, and hospitals may justly be expected to maintain such standards, or cease to exist.

MATERNITY HOSPITALS

In recent years, the public has learned to place a correct estimate on the maternity hospital, and there is already a keen appreciation of its appropriateness. Slowly but surely the institutional is supplanting the residential lying-in room, and for manifold reasons, this tendency should be warmly encouraged by the medical profession.

Well-regulated maternity hospitals offer a maximum of comfort and safety, at a minimum outlay. In point of efficiency, the affluent and the poverty-stricken are on parity. Such hospitals constitute the best possible schools for the attendant and the nurse, and in them is being reared a type of men and women who are willing to work efficiently and exclusively in this specialty.

At every stage of delivery, the attendant is in full command of an adequate equipment. Emergencies may be met promptly and without embarrassment, and, not infrequently, a calamity is averted. Serious complications or fatalities, in this department of medicine, possess a peculiar significance.

The maternity hospital which is worthy of the name is intolerant of loose methods, of shabby subterfuge or ill-masked pretense, and is insistent on strict observance of scientific law. With rare, though conspicuous exceptions, this phase of our hospital system seems not to have elicited the interest and support which it merits.

* Chairman's Address before the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912

The lying-in wards of county and municipal hospitals have been much neglected and the service rendered therein is too often indifferent, if not unsafe. Some of the so-called private hospitals which invite this character of work are of low standard and without reason or justification for their existence.

Society needs to be reminded that the highest obligation of man to woman lies in his safeguarding and protecting her during that trying period of approaching motherhood.

PRIVATE HOSPITALS

Private hospitals, though of recent origin, occupy a large place in the general system. Physically, they present every phase, from the architectural model to the ill-favored and the squalid. In their equipment and conduct, there is a similar range from the artistically and ethically perfect to the incongruous and disreputable.

As the name implies, they are the creature of proprietorship and their real status is measured by the character and morals of their owners and profesional patrons. As exemplified by the better types, these institutions are an acceptable unit in our hospital system, as they certainly are a permanent factor in modern life.

But the function of the private hospital is, in the main, that of a hotel for invalids. Inviting a promiscuous patronage, it does not admit of an official staff or a well-defined policy, and team work is impossible. As a rule, there is no executive head. Such clinical records as are kept, are the private property of its patrons, and statistics are wholly ignored. Logically, the work of such institutions is of a perfunctory, routine character. There is a notable lack of scientific interest and of that fine sense of responsibility which is manifest in more highly organized institutions.

The physician-owned hospital is very generally regarded as of doubtful propriety. Whether run for profit or convenience, a certain degree of odium attaches to it. There is, possibly, too close an analogy between such enterprises and the physician-owned drug-store.

It cannot be denied, however, that in many communities, regardless of tradition, prejudice, or financial considerations, physicians are forced to provide their own facilities or withhold hospital benefits from their patrons. The exactions thus entailed are a source of much vexation, and with few exceptions, are sharply resented. It would be a fortunate thing for all concerned, and for many reasons, if physicians could divorce themselves from hospital ownership and relegate the financial undertaking to private capital.

There is another matter pertaining to private hospital conduct which may be considered with profit. With increasing frequency, private hospitals are the recipients of private benefactions. Such funds are to be regarded always as a sacred trust and should be scrupulously dispensed for charity. Free beds, thus endowed, should never become a source of financial gain to the physician. It should be clearly understood that any person entitled to occupy a free bed is equally entitled to free service. If such patient can, at any time, in a small way, make financial return for such service, the hospital fund should have first consideration.

I come, now, to the consideration of a phase of this problem which cannot, and ought not to be approached in any other than a spirit of absolute frankness. It is high time that public attention be called to a considerable number of irresponsible, unspeakable establishments which exist in every large community under the misnomer of private hospital. Behind its closed doors, there is found opportunity for the professional derelict, and under the veil of secrecy, encouragement for practices that are both nefarious and criminal. Responsibility for the correction of this growing evil rests with the medical profession. The remedy lies in close scrutiny, full publicity and, finally, a resort to the courts, based on clearly established evidence.

MUNICIPAL HOSPITALS

A discordant note proceeds constantly from the executive side of municipal hospitals. There is a strange discrepancy between the financial support accorded to them and the woeful lack of wisdom and, not infrequently, of common decency in its expenditure.

Structural conditions are not only tolerable, but acceptable. Standardized buildings and adequate equipment are by no means exceptional. Architects have displayed wise forethought in the methods of heating, lighting and ventilation. From the kitchen to the laboratories, every detail essential to convenience and comfort has been carefully worked out, but too often do we find illustrations of what is perfectly obvious that neither architectural design nor physical conditions are the main essentials in hospital efficiency.

Considered as a class, from the county poor-house to the imposing group of buildings which stand for the metropolitan hospital, a low order of intelligence seems to be the rule in administrative organization. Everywhere are seen the finger-prints of the politician; the ward boss and the political heeler exert their baneful influence without check or scruple. Tenure of office, for the chief executive, rests on his status as a henchman, rather than on his moral or intellectual fitness. The value of experience and training has been largely ignored and staff appointments are distributed for personal or political reasons, rather than for professional worth.

Few men have participated in the daily routine of ward work (the really serious side of hospital service) who have not experienced the disheartening influence of inefficient executive management. Reckless waste and utter disregard of all that makes for high efficiency (the veriest curse of many of our public hospitals) find no parallel in industrial enterprises. With here and there a conspicuous exception, it may be safely said that, not until municipalities are emancipated from a vicious system which makes place preferment depend on political service, can we hope for radical betterment of hospital conditions.

ORGANIZED CHARITY HOSPITALS

Hospitals founded and liberally supported by organized charity are an evidence that the faith mankind has in the ultimate righteousness of society is not misplaced. Eloquently they speak for the finer attributes of human character—generosity, sacrifice, human sympathy. These words are from Gethsemane and after many years became the inspiration of Hogarth.

The world fortunately has high regard for social efficiency—a phrase that applies, very properly, to that large class of wage-earners who, in self-respect and intelligence and respectability maintain homes, rear and educate children, and possibly set aside a pittance for the future, but whose income is barely adequate to meet their daily needs. Normally, they are able to defray the daily cost of living, while an emergency is a circumstance fraught with terror.

For this class, a hospital experience without liberal and well-timed aid means dissipation of modest savings, the incurring of indebtedness and sacrifice of future comfort. More than this, it means mental worry which disheartens the bread-winner and disintegrates the home. Here organized charity through its hospitals finds splendid opportunity; and many who have played their part know how cheerfully it has borne its burden.

A word of caution to those entrusted with the control of this important interest. Trustees and executive officials should take heed lest through their desire for patronage, which is little less than greed of gain, the charity hospital be degraded and demoralized by the wide-open door for promiscuous professional service. The reputation of an institution depends manifestly on a wise administration and carefully selected staffs, and it is equally true that no hospital can afford to become sponsor for the untrained and inexperienced.

ACADEMIC HOSPITALS

The last and most conspicuous hospitals in this category are those of academic type. The subject can scarcely be approached without entering on the broader and more attractive field of medical education with which its interest is interwoven. For ages there has existed an interdependence between existing hospitals and medical teaching. Through this relationship, both interests have profited, though it is always to be remembered that betterment of hospital conditions has been affected through the initiative work of the teacher whether intra- or extraneural. It is probable—in fact, certain—that in all hospitals which welcome and encourage the teaching function, it will continue, and that there will result a perfect correlation of interest between many municipal and charity hospitals and medical schools.

Very tardily and after much halting, a respectable minority of American universities have awakened to their real duty as regards medicine, and in good faith are studying its needs. Immediately, the necessity for a new type of hospital, that finest and most productive of all laboratories, became imperative, and governing bodies are expected to assume a new responsibility.

Regarded as laboratories, it is fundamental that they be owned and operated by the parent institution. A few universities grasped this bit of knowledge very early, but to the most it came as a rude awakening. There is no escape from the conviction that medical education cannot advance under an inhospitable roof, nor attain large results under a domination that is not in harmony with approved methods and high ideals.

The financial problem here involved is, to say the least, formidable. Regardless of the size of classes, the number of beds necessary for logical sequence in teaching is not elastic. Flexner insists that as many beds are required for twenty students as for a much larger number. Laboratories, costly accessories and multiplicity of apparatus complicate the situation, and it becomes apparent that universities which foster medicine must either draw heavily on university funds, seek legislative appropriations or enter on a strenuous campaign for private benefactions.

When fully installed and under way, there is the comforting assurance that worthy institutions of this type have rarely, if ever, closed their doors for lack of financial support. The truth is that mankind has high regard for the producer, and there is a ready market for the thing of value. If the signs of the times are not misleading, it will happen, in the near future, that public benefactors and legislative bodies will heed the cry of those who labor in the service of productive scholarship.

It is unnecessary to warn heads of departments and the teaching staff of academic hospitals that there is in store for them a big sacrifice on behalf of higher medical education, in point of time exaction, sustained effort over long periods and meager compensation. Under the present and proposed policy, there can be no compromise. The one controlling factor in this scheme lies in the intimate association of teacher and pupil in the laboratories, in the wards and in the operating-room. Private interests are to be held subsidiary to university requirements, and the time will come in the near future when the life-work of the medical teacher will be, in large measure, within the walls of the university buildings.

I cannot leave this subject without speaking an earnest word in behalf of the hospital intern. It is to be recognized that the intern staff is indispensable in carrying on the work of any hospital, and more particularly, those of the academic type. The intern belongs to the class of highly skilled labor. Opportunity is his compensation, and there should be no exaction of drudgery. Hence, it becomes the duty of those in authority to see that he has such opportunity as is worthy of his earnest effort. The intern is the aid-de-camp of his superior; his hours of work are not limited; his personality is lost in that of his chief. It is asking not too much that provision be made for his comfort and physical welfare in the way of adequate quarters, an inviting, well-cooked cuisine and library facilities. Some provision should also be made for recreation and physical exercise, in the way of gymnasium facilities and ball or tennis courts. By an observance of this admonition, hospitals will make a substantial gain both in the type of students who will enter their service and in service rendered by the individual.

This audience, representative of the best there is in American medicine, is reminded that the hospital as an institution is of your creation; it is in every sense your ward, and responsibility for its uplifting is yours. It would be a splendid thing if a wide-spread movement could be initiated for the classification of all civil hospitals within your jurisdiction. Such a measure would tend to elevate standards and gradually to eliminate the unworthy. It would materially aid the general public in the selection of wisely conducted, well-equipped institutions; it would afford a safe criterion for the bestowal of private benefactions or for the appropriation of public funds. There is scarcely to be found a wider field for the exercise of fine discrimination between sterling merit and pressing need, on the one hand, and varying degrees of unworthiness from the imperfect to the impossible, on the other.

Believing that helpful criticism and full publicity will find a hearty welcome in hospitals of the better type, I respectfully recommend: That the American Medical Association, through its component bodies, inaugurate a system of organized inspection and classification of all American civil hospitals; that for this purpose commissions be created, either by state or county societies, under instructions to report their findings to the Council of the parent Society. It is further recommended that an appropriation to be determined by the Council be made for the prosecution of this enterprise.

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EXPERIMENTAL INTESTINAL OBSTRUCTION IN DOGS WITH ESPECIAL REFERENCE TO THE CAUSE OF DEATH AND THE TREATMENT BY LARGE AMOUNTS OF NORMAL SALINE SOLUTION *

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In an investigation into the cause of death following a high intestinal obstruction in dogs,[1] we were able to exclude, as causal factors, an invasion of the blood and organs by bacteria, and any influence due to the absorption of food residues in the stomach or intestine at the time the obstruction was produced. It was also determined that dogs would live under these circumstances for periods of ten days, provided no strangulation was present, and they were given normal salt solution, subcutaneously, while life was considerably shorter than this when a strangulation existed or the saline was withheld, and they received water only by mouth. At autopsy there was constantly found a more or less marked degeneration of the kidney and liver cells, often going on to actual necrosis, and the intestinal mucosa above the obstruction showed an exfoliation of the lining cells, a round-cell infiltration and a marked edema of the submucosa. It was remarked that the changes in the kidney and liver were the same as those found in various toxic conditions, including that of starvation. The work of Clairmont and Rangi, of Roger, and of Roger and Garnier was cited to show that the stagnated intestinal contents are very poisonous if they obtain entrance into the blood.

In view of this fact, of the constant damage found in the intestinal mucosa and of the evidence of toxic action on the kidney and liver cells, we tentatively suggested that death might be the result of the absorption of substances from the intestinal lumen which passed into the circulation in a poisonous condition, because the normal defense of the mucosa against such absorption was destroyed. We could offer no evidence for the proof of this suggestion, and nothing in our work gave any information as to the source of the hypothetical poisons. The beneficial action of the saline injections was attributed to one of two things, either a diuretic action on the kidneys, helping to eliminate the poisons, or a diminution in the desiccation of the tissues due to the loss of water in the vomitus.

Following this publication, the work was continued along the same lines with the hope of either supporting or controverting the absorption theory, and if it proved correct, with the hope of determining the sources of the poison or poisons.

We first studied the conditions arising from a low obstruction along the same lines as had been followed in the high obstructions. The special clamp described in the previous paper which produces a complete block of the intestinal lumen, without any interference with the circulation through the intestinal wall, was applied in the vicinity of the cecum. This operation was done six times. The animals behaved in the same general way, after the obstruction was produced, as those with the high obstruction, their symptoms being the same as those described in our previous work. The longest postoperative life was ten days, the shortest, five and a half days, and the average, seven and a half days, which was a few hours longer than the average of nine dogs previously reported in which the clamp was applied in the lower duodenum.

The animals in the two series were under identical conditions, and both received the subcutaneous injection of normal saline solution, the high series getting 150 c.c. daily and the others 200 c.c. daily. It is therefore seen that from the standpoint of symptoms and of length of life, an uncomplicated intestinal obstruction in dogs varies little whether it occurs high in the small intestine, or near the cecum. The only difference noted was that in the latter the vomitus was very foul in odor and, possibly, was in larger quantities.

Autopsy was done in every case, and changes in the kidney, liver and spleen were found exactly similar to those above described as having been present in the high obstruction. In the intestine, however, it is important to emphasize the fact that a marked difference existed. The comparatively small section of intestine above the clamp in the high obstruction—never more than 30 cm.—was rarely found to be enormously distended, and in no case was there any gross damage to the intestinal wall approaching gangrene. In one or two instances, superficial mucosal ulcerations were seen and sometimes small hemorrhages in the mucosa were present. Microscopically, damage to the lining cells was always present. On the other hand, the intestine for many centimeters above the clamp, in the case of a low obstruction, was enormously distended in every case. It was filled with as much as 1,500 c.c. of a bloody, foul-smelling fluid. The wall was stretched to a paper thinness. The color was a deep purple, or sometimes even black. The mucosa was necrotic over extensive areas. In short, a condition approaching gangrene was present, owing probably to the disturbance in circulation from the enormous distention. In one case an actual perforation had taken place, partly from this cause, and partly from a volvulus around the clamp as a center.

Aerobic and anaerobic cultures were taken after death in four cases, the same technic being followed as in the cases reported previously. The peritoneum, the femoral blood, the liver and the spleen were all found to be sterile in every instance, except the one in which a perforation had taken place. Here the peritoneal tubes alone showed an abundant growth.

It was thus proved that a bacterial invasion of the organism is not necessarily present in a low obstruction. It was also apparent that the course of the disease, the length of life and the tissue changes in the two are very similar, except for the important difference in the extent of damage to the intestinal wall. If it be true that the damage to the mucosa permits the passage of unaltered poisonous substances through it into the blood, the quantities of these entering the circulation should be much greater in a low obstruction than in a high. If these poisons are the causal factor in killing the animal, death should result sooner in the low than in the high obstruction. Such, however, we did not find to be the case, and hence we concluded that the correctness of this theory was rendered doubtful.

In our earlier work, we had noted the fact that the dogs with a complete high obstruction were not only

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.
* From the Department of Surgery of the Cornell University Medical College.
1. Hartwell and Hoguet: Am. Jour. Med. Sc., March, 1912.

deprived of any nutritive materials, but also of water, because all that they drank was promptly vomited. To overcome this condition we began the subcutaneous injection of normal saline solution. This was given in amounts from 100 to 150 c.c. daily, and it resulted in delaying the symptoms of poisoning and in prolonging the life of the animals. Its effect had been so marked that we determined to study this question more fully, and for this purpose Dr. Benedict, of the department of chemistry, kindly offered to make some studies in metabolism for us. To him we are indebted for a most important discovery which, we believe, throws much light on the question under consideration, if it does not completely solve the problem of the cause of death from uncomplicated intestinal obstruction.

EXPERIMENT 1.—The first dog under his observation was a female in good condition, weighing 12.1 kg. The clamp was applied under ether narcosis on the lower part of the duodenum, March 4, 1912. The following table gives the results found during the three and a half days that she lived.

From these figures it is seen that she lost 2.2 kg. in weight. Her output of fluids, including the urine and vomitus, but not counting the water of expiration, was 1,857 c.c., to offset which she had only received 300 c.c. subcutaneously. The total nitrogen output in two days was 10.34 gm., which equals, approximately, 0.5 gm. per

TABLE 1.—DOG 9.—RESULTS OBTAINED AFTER CONSTRICTION OF THE LOWER PART OF THE DUODENUM FOR THREE AND ONE-HALF DAYS

Date	Weight, kg.	Urine, c.c.	Vomitus, c.c.	Combined Fluid Output, c.c.	Total Nitrogen, gm.
3/4/12	12.10	..	...	....	.....
Clamp applied to lower duodenum.					
3/5/12	11.28	26	720	746	
Received 100 c.c. of a 0.9 per cent. saline solution.					
3/6/12	10.36	15	500	315	10.334
Received 100 c.c. of a 0.9 per cent. saline solution.					
3/7/12	9.86	86	510	596	
Received 100 c.c. of a 0.9 per cent. saline solution.					
3/8/12	.....	..	...	...	.....
Died.					
Totals,	.....	127	1,730	1,857	.....

kilo per day, which is two or three times the normal output. A sample volume of urine of 127 c.c. contained 3.574 gm. albumin. The creatin excreted in this equaled 0.638 gm., which was more than double the amount of creatinin. It was obvious from these figures that a very severe grade of tissue disintegration was taking place, and that a water loss averaging about 5 per cent. of the body weight was suffered each day. It at once became apparent that the amounts of water we had been giving were entirely inadequate to replace this great loss, and that probably death was much hastened by such a loss.

Accordingly, we made a study of three dogs in which the daily output was measured, and a quantity of normal saline about 100 c.c. in excess of this was injected under the skin. These dogs, with the clamp applied on the lower duodenum, were kept alive in this way for three full weeks (one for twenty-six days), and during this time they remained in good condition. They were then etherized a second time, and the abdomen opened to see if the obstruction was complete. In every case it was found to be so. The stomach and duodenum above the clamp were excessively dilated, and their contents could not be forced through the clamp into the intestine below, which was found empty and much contracted. By varying the amount of water injected, we could accurately control the condition of the dogs. The complete study of one of the experiments is shown below.

SUMMARY OF TABLE 2

A bitch weighing 11.3 kg. had the clamp applied, under ether narcosis, on the lower duodenum, March 13. April 3, twenty-one days later, when in excellent condition, she was again etherized and the abdomen reopened. The obstruction was found to be complete. The clamp was removed and she is still alive. The total vomitus during the twenty-one days was 6,640 c.c. and she received to offset this 8,250 c.c. of saline solution. Much of the vomitus had to be obtained by the stomach-tube, as the stomach became dilated and would not empty itself. She lost three kg. in weight. The study of the urine gave most interesting results. During the first week it showed very marked abnormalities. The albumin content was as high as 4.5 gm. per day, and the total nitrogen, exclusive of this, was, on an average, 5 gm. The creatinin-creatin ratio was about 1 to 2 instead of 10 to 1, which is near the normal for a starving dog. The latter ratio was later established. During this week, the vomitus was 1,870 c.c. in amount, which was 120 c.c. more than the amount of saline solution administered.

TABLE 2.—DOG 2.—RESULTS OBTAINED WITH CLAMP ON THE DUODENUM FOR THREE WEEKS AND INJECTIONS OF SODIUM CHLORID

Date	Weight, kg.	Urine, c.c.	Vomitus, c.c.	Combined Fluid Output, c.c.	Injection 0.9% NaCl. Sol., c.c.
3/13/12	11.3	...	...	...	...
Clamp applied to lower duodenum.					
3/14/12	.....	120	420	540	250
3/15/12	.....	175	—	175	200
3/16/12	.....	160	600	760	200
3/17/12	10.46	170	—	170	200
3/18/12	10.84	135	—	135	500
3/19/12	.....	†	†	...	150
3/20/12	.....	130	850*	980	250
3/21/12	9.64	130	—	130	550
3/22/12	10.24	100	550*	650	850
3/23/12	.....	80	800*	880	500
3/24/12	10.24	...	...	...	600
3/25/12	9.68	70	1,180*	1,250	750
3/26/12	.....	†	†	...	800
3/27/12	.....	85	1,160*	1,245	800
3/28/12	10.00	310	—	310	700
3/29/12	.....	562	150*	712	300
3/30/12	.....	390	— *	390	200
3/31/12	.....	150	200*	350	200
4/1/12	.....	55	80*	135	150
4/2/12	8.9	55	— *	55	100
Is in excellent condition.					
4/3/12	8.3	...	650	650	—
Obstruction found complete. Clamp removed. Recovery.					
Total for 21 days....		2,817	6,640	9,517	8,250

* Obtained by stomach-tube. † Incomplete. — None.

The urine equaled 890 c.c., so that there was a loss of water equal to one-tenth of the body weight. The condition of the animal was only fair during this week. After the seventh day the saline was increased to 550 c.c. daily and maintained there, or higher, for several days. The abnormalities in the urine entirely disappeared, and it became the urine of a dog under normal starvation, except that it contained bile throughout. There was coincident improvement in her condition. Later, on the sixteenth day, when the vomiting had ceased and the stomach tube recovered very small amounts, the saline was again decreased to 200 c.c. or less, and the dog remained well, and the urine continued normal.

EXPERIMENT 3.—A small bitch weighing 5.88 kg. had the clamp applied under ether narcosis to the lower duodenum, April 8, 1912. She received the normal saline solution subcutaneously, every day, the first injection of 300 c.c. being given immediately after the operation. This quantity was repeated on the two following days, and then for sixteen days she received 400 c.c. daily, and for two additional days 300 c.c. each. The total saline administered during the continuance of the experiment for twenty-one days was 7,900 c.c., an average of 376 c.c. per day, which was equal to about 8 per cent. of her average body weight. During this time the total amount of

fluids excreted in the urine and the vomitus was 6,354 c.c. Much of the vomitus had to be extracted by means of the stomach-tube because the stomach became atonic and vomiting ceased even though the organ was full. Her loss in weight was 1.4 kg. Throughout the entire experiment she remained in a condition of apparent perfect health. She was always playful and lively. On the twenty-first day she was etherized and the abdomen was reopened. The clamp was found *in situ* and the obstruction was complete. Four hundred and fifty c.c. of water were put in the stomach through the tube. This readily passed through the pylorus and down the duodenum to the clamp where it was completely stopped. It was impossible to force any beyond the clamp by direct pressure on the duodenal wall. The clamp was removed and a small perforation which was completely closed by the rubber covering of the plate and by adhesions was found in the bite of the clamp. There was no peritonitis.

Experiment 4.—A bitch weighing 12.2 kg. had the clamp applied under ether narcosis to the lower duodenum April 19, 1912. During the following six days she received 1,500 c.c normal saline solution subcutaneously, and excreted in the form of vomitus and urine 1,020 c.c. On the seventh day she did not vomit, and the stomach-tube recovered nothing. We suspected that the clamp was not tight enough to produce a complete obstruction, and she was accordingly given 500 c.c. of water through the stomach-tube and a quantity of meat which she ate greedily. Following this she again vomited, and in four days put out 2,150 c.c. in which the digested meat was present. The injections were then increased, quantities varying from 700 to 500 c.c. being given daily. The vomiting ceased and a quantity of urine was passed, slightly less than the saline injected, the total for seven days being, saline 4,000 c.c, urine 3,200 c.c. The saline was again decreased, and the urine fell, but no vomiting recurred. She was etherized May 16, twenty-six days after the obstruction, and the abdomen was reopened. The obstruction was found to be complete. The stomach and duodenum were found to be enormously dilated, having a capacity of 1,000 c.c., while the intestine below the clamp was contracted and empty, not showing any trace of bile. No detailed study of the urine was made in this or the preceding case.

We encountered one difficulty which rendered several of our cases inapplicable to a study of complete obstruction, so that we are able to report only on the three here given. It was found at autopsy in such cases that the clamp had not remained sufficiently tight to cause an absolute blockage. We could force water beyond it with sufficient pressure, and sometimes there was evidence that small amounts of bile had leaked through it. In every case these dogs gave conclusive evidence that the clamp had caused a complete occlusion for at least two weeks. Then, owing to the lessened congestion, and possibly to the adjustment of the intestine within the clamp, it seems possible that leakage had taken place. We were never able to determine positively, until the abdomen was reopened, in which dogs we should find an absolute obstruction, and in which there had been a slight leakage. Those showing the leakage might with propriety be included in our experiments so far as the main result is concerned, because the clamp applied as described caused death in every case in which the large quantities of salt solution were not used. It is technically a very difficult thing to produce absolute closure of the intestinal lumen without causing some necrosis, and this we carefully avoided.[2] It will be noted that in many instances there was no vomiting, but the stomach-tube recovered large quantities. This must be taken into account in determining the amount of saline to be administered, because whether vomited or retained in the stomach, it means a loss to the animal. These three dogs were under identical conditions with the nine previously reported, except that they received amounts of normal saline solution about 100 c.c. in excess of the daily output of vomitus, often reaching 500 to 700 c.c. per day, while the former series received only 150 or 200 c.c. per day. No dog in the first series lived longer than ten days. All dogs in the later number were alive and in good condition at the end of three weeks, and apparently would have succumbed only to starvation if the experiment had been continued.

From these results it is plain that the loss of fluid from the organism is the disturbing influence and is the important factor in explaining the symptoms and death following uncomplicated high intestinal obstruction in dogs. Death is caused by the loss of water which the tissues sustain from the excessive amounts vomited, and death can be prevented by replacing this water by subcutaneous injections of normal salt solution.

In accepting this conclusion we are forced to abandon our previous tentative suggestion that poisonous substances enter through the damaged mucosa. The only intoxication present is that produced by tissue disintegration, due to the abstraction of water from the organism.

The source of such enormous amounts of vomitus is a matter of interest. Dr. Benedict's study of the vomitus from the experiment detailed under Table 2 showed it to be strongly acid, and to have a specific gravity of 1,007. The total amount contained 16.72 gm. of chlorin, which, computed as sodium chlorid, equals 27.65 gm. Bile was always present. The low specific gravity indicates that it was largely water. These findings show, as would be expected, that the vomitus is a diluted mixture of bile and gastric secretion. The part played by the pancreas and duodenum is unknown. In all the cases the vomitus was more abundant during the early part of the experiment than it was later, and toward the end it often almost entirely disappeared. The following considerations offer an explanation of this unexpected fact. The dogs were all in good condition when operated on, and presumably the liver and other glands were actively secreting. The products of these glands, bile, pancreatic juice and duodenal secretion, found no outlet beyond the duodenum, and hence were forced back into the stomach. Here they acted as an irritant to the gastric mucosa, and as a result a secretion of gastric juice and an excretion of water took place to the enormous amounts found. As the experiment proceeded the dog gradually developed the condition of a starving animal in which all the alimentary glands become inactive, the bile in particular being very small in amount. The disturbing influence of these retained secretions being absent, the vomiting gradually grows less, and finally almost ceases. The small amount of bile that is secreted is taken care of in the duodenum and stomach, being either digested or absorbed. That some is absorbed is shown by the fact that the urine contains bile throughout the experiment. The bile alone, however, is not the offending factor, because in cases in which the common bile-duct was tied and an anastomosis made between the gall-bladder and intestine below the clamp, large amounts of vomitus appeared, though not equaling those above given. On the other hand, an obstruction at the pylorus produces no vomiting whatever.

We wish to emphasize particularly the fact that the results we obtained are present only when the obstruction is uncomplicated by any serious disturbance of the circulation through the intestinal wall. Anything approaching a strangulation, however small in extent, introduces

2. Since this paper was written a fourth dog under ether narcosis had the lower duodenum sectioned and the two ends closed by invagination. He behaved in every way like the dogs described in the text. Here obviously no leakage could have taken place.

a new factor, and the results are quite different. A future communication will deal with this phase of the subject, but we may here cite one case which illustrates it. In this instance the clamp was applied too tightly, and the course of the disease was in no way influenced by the saline injections. The dog died on the fifth day. Autopsy showed that the clamp had produced a gangrene of the intestine within its bite. There was no leakage through the gangrenous area owing to its occlusion by the rubber tube covering the clamp and the adherent omentum around it. The peritoneum was normal in appearance throughout, there being no evidence of peritonitis. Except for the small area of gangrene, the condition was as in the dogs which were kept alive for three weeks and longer by the administration of the saline solutions. Other facts obtained bear out this conclusion, namely, that even a small extent of strangulation entirely changes the picture.

Our work, to the present time, has dealt entirely with high obstruction. It is a matter of great importance to know whether the symptoms and death resulting after a low obstruction can be influenced in the same way by the administration of normal saline solution under the skin. The little experience we have had with this question indicates that it can be, up to a certain extent. Just what this extent will prove to be, we hope to determine by a further course of experiments which is now in progress.

The applicability of the results we have obtained to clinical intestinal obstruction can only be determined by clinical study which we have had no opportunity, as yet, to make. In making such application it must be remembered that an obstruction combined with strangulation (as is always the danger in acute conditions in man) will not be influenced to any extent; and, of course, no treatment in any way lessens the necessity of mechanically relieving the obstruction. It seems reasonable to hope that there may be an application of it to other conditions than intestinal obstruction in which excessive uncontrolled vomiting is an important factor. It may well be that the enormous loss of water in the pernicious vomiting of pregnancy and in Asiatic cholera is an important element in the intoxication there seen and that fully replacing this water may be very beneficial. To be of any avail the amounts of saline injected would have to be exceedingly large, about one liter per day in excess of the total output, which, as is known, may reach several liters. The dogs were able to take, without inconvenience, one-tenth, and more, of their body weight per day. When they were vomiting excessively, most of this came back in the vomitus, and very little from the kidneys, but if large quantities were administered after the vomiting had lessened, it reappeared in the urine. The usual amounts given to the dogs would correspond to from 5 to 10 liters per day for a moderate-sized man, an amount not difficult to give by continuous hypodermoclysis.

SUMMARY

Dogs with complete obstruction in the lower duodenum, if untreated, will live only a few days—three to ten. During this time they vomit large quantities. The urine shows marked abnormalities when compared with the urine of a dog in simple starvation. If a quantity of normal saline solution, slightly in excess of the total loss of water in the urine and vomitus, be given daily in the form of hypodermoclysis, the dogs promptly return to the condition of a dog undergoing simple starvation. Dogs so treated have lived in excellent health for periods of three weeks and more, showing at the end of that time every indication that they would live much longer if the treatment were continued. The important element, therefore, in the development of the symptoms seen in intestinal obstruction in dogs, is the loss of water due to the vomiting. The symptoms of intoxication are those resulting from tissue disintegration following this loss. Replacement of the water cures the symptoms and prevents death over astonishingly long periods. If strangulation complicates obstruction, the above facts do not seem to hold true.

We wish to express our sincere thanks to Dr. Benedict, who, in addition to finding the key to the solution of our problem, gave us very valuable advice throughout, and made all the chemical analyses.

ABSTRACT OF DISCUSSION

DR. GEORGE H. WHIPPLE, Baltimore: My experiments are slightly different from those of Drs. Hartwell and Hoguet, in this respect: I have dealt almost exclusively with the closed intestinal loop, which is isolated by two ligatures, one just below the pancreatic duct, and the other at the beginning of the jejunum. This procedure together with a posterior gastro-enterostomy excludes the gastric juice, pancreatic secretion and bile from the closed loop. Dogs treated in that way die in from twenty-four to forty-eight hours with symptoms of shock, low blood-pressure, vomiting, lowered temperature and symptoms of intoxication. It seemed to us of interest to study the material which accumulates in this closed washed loop. When heated to 60 C. and filtered, then introduced into a normal animal intravenously or intraperitoneally, it causes death in from three to twelve hours, the animal manifesting symptoms closely allied to those seen in the animal on whom the closed-loop experiment was performed. There is an elimination of fluid by the stomach and intestines which may be extreme, in fact so profuse as to be hemorrhagic in character. It is associated with extreme or almost complete splanchnic paralysis, and I think that this is one of the most dangerous features in the systemic effect of this toxin.

If this fluid is introduced intraperitoneally, death occurs more slowly, but simulates closely the death of animals with a closed loop. This toxic substance, which I believe to be of importance in intestinal obstruction, resists digestion, autolysis and putrefaction. No similar toxic substance can be produced *in vitro* by digestion, putrefaction, or bacterial growth, aerobic or anaerobic, in association with normal intestinal mucosa. It seems to be a rather definite substance, and I hope to be able to determine more about its chemical nature in the near future. I believe that it is produced by the mucosa, that it is the product of perverted activity on the part of the mucosa of the closed loop, probably stimulated or rendered abnormal by the presence of immense numbers of bacteria, although it cannot be produced by the bacteria themselves. Recently I had an opportunity to study the fluid obtained from an acute case of high intestinal obstruction in a woman. It was obtained at operation by puncture and drainage. When introduced into a normal dog, it produced the typical reaction, death and autopsy findings such as one finds after injection of fluid from these closed duodenal loops. So that there must be a close relationship between the substance obtained from these closed loops and that present in acute intestinal obstruction. I have noticed that in introducing sublethal amounts of this toxic material the dog becomes resistant to later injections. Therefore, I sensitized an animal by repeated injections of this toxic material and then made a closed duodenal loop. This animal lived six days, while the average duration of life of these animals with closed duodenal loops is two days. It seems to me that the observations made by the authors do not necessarily conflict with ours. It is obvious that these substances in the obstructed bowel can be washed out by vomiting or gastric lavage and that saline infusions would help to eliminate them. The dehydration of the tissues may be an important element but it is secondary and not primary. I can show that this toxic substance stimulates active secretion of fluid by the intestinal tract.

Dr. Beth Vincent, Boston: In the consideration of the subject of experimental intestinal obstruction it is well to emphasize the point that Dr. Hartwell made several times; that is, the fundamental difference between a simple obstruction where no damage is done to the protecting mucous membrane of the bowel, and an obstruction complicated by strangulation or some disturbance of the circulation which will result in a very serious injury to the protecting barrier of the bowel, the mucous membrane. The first form of simple obstruction with undamaged mucous membrane seems to resemble ordinarily the chronic forms of intestinal obstruction seen clinically. The other form with strangulation resembles the acute forms of intestinal obstruction. Dr. Hartwell has been concerned with the first type of obstruction. A year ago Dr. F. T. Murphy and I did some work which was chiefly directed toward finding the cause of death in the second type, the acute intestinal obstruction. Dr. Hartwell has shown very clearly the great importance of the element of abstraction of water from the tissues. In the chronic form it seems that there is a lack of absorption which he makes good by giving water; while in the acute form it is the absorption of toxic products from the intestine which we believe to be the cause of death. We came to the conclusion that the occlusion alone was not sufficient; that the disturbance of circulation was the vital factor, and that the obstruction of the venous return was the most important element in the circulatory disturbance. It caused the damage to the mucous membrane that permitted absorption, and also helped in the formation of the contents, the absorption of which, we thought, caused intestinal obstruction and death.

In our work this toxic substance was rendered inert by boiling. We centrifuged the intestinal contents and filtered them through a Berkefeld filter. We found that the supernatant fluid filtrate were also inert, so that it was probably more nearly allied to the bacterial than to chemical poisons. If this is wrong, if it is one of these elements, we hope the toxic substances will be isolated, and the symptoms of acute intestinal obstruction reproduced in animals, as Dr. Whipple has done in simple obstruction. Until this is accomplished, we shall still seriously consider the theory that the bacteria and their end-products play an important rôle in causing death in acute intestinal obstruction.

Dr. Angus McLean, Detroit: The intestinal obstruction which is usually termed ileus or paralysis of the intestine following operation, fortunately, does not occur very often; in my experience about once in one hundred times. That condition may follow operation on a non-septic case, but more frequently, I think, it follows in the wake of septic operations, as, for instance, when there was a perforated appendix or a localized abscess. About four years ago I was at a loss to account for the death in three cases of ileus. I made a series of experiments, producing the intestinal obstruction by severing the bowel and sewing the ends together. I had great difficulty in creating an obstruction by simply tying or clamping the bowel. The obstruction would invariably leak and the result was a fatal peritonitis. After obstruction had taken place, for two or three days, some of the fluid was taken out of the dilated portion of the intestine. This fluid was filtered and injected into guinea-pigs and dogs. The only trouble I had was the occurrence of subcutaneous sloughs. The dog got very sick after three or four days. It was then bled and the serum injected into other dogs and guinea-pigs. It was injected subcutaneously, intraperitoneally and intravenously. There was no marked evidence of disturbance of any kind. In a few hours the animal was as well as before. I also transfused dogs, transfusing blood from the sick into the well dogs. These dogs were weighed; the weight of the well dogs was increased after the experiment, and that of the sick dog was proportionately less, showing that the blood undoubtedly passed from the sick to the well dog. In a few hours the well dog would feel as well as it did before. I think that that proves that it was not a bacteriemia, and that there was no toxin in the blood, because otherwise the well dog would have got sick. From these experiments I came to the conclusion that death in ileus was not due to a toxemia or a bacteriemia, but to something else. These dogs lost weight rapidly, not because of any change in feeding, of fluids, but because of the large amounts of water poured into the obstructed portion of the bowel. Of course, bile and pancreatic juice are poured into the obstruction and vomited up in large amounts. Then I reached the conclusion that these dogs died from loss of fluid that had been drained out, and I believe the same thing to be true of ileus in the human being. I have seen such patients die years ago, but I believe they did not die of peritonitis. They had a localized peritonitis, accompanied by an ileus, which was the real cause of death. Just what causes ileus, whether trauma or something else, is hard to say. In my opinion the only thing to do is an early enterostomy. If a person is taken with ileus, as meteorism, pain and vomiting, or, what seems more like an overflowing of the alimentary canal, and if, after washing out the stomach every three or four hours or giving rectal enemas, the patient is not relieved inside of thirty-six hours, do an enterostomy. In my experience the ileus is confined to the small intestine and, coming on as it does very often after a laparotomy, it is a very simple matter to remove a few stitches. The distended intestine at once comes into view, and the enterostomy is quickly performed. I prefer local anesthesia to general anesthesia. Anoci-association may be used to block the terminal branches of a few spinal nerves. There will be less shock to the patient, and a greater likelihood of recovery from the operation. The distended loop of bowel easily comes up into the field of operation, and you can open it and insert a tube. There is not only the escape of gas from the bowel, but of secretions, that which is being formed by the mucosa of the bowel as well as pancreatic juice, and in a few hours a large amount of fluid is excreted. Then these people will be ready to take fluid by mouth and, in about half the cases, they will get well, if the enterostomy is done sufficiently early.

Dr. J. Shelton Horsley, Richmond, Va.: One of the most interesting features of experimental intestinal obstruction is the attempt to ascertain the cause of death. The difficulty is that normally the intestinal tract contains substances which are poisonous if injected into the circulation. Material from normal intestinal contents injected into the circulation will produce symptoms very similar to those that occur when the material from an obstructed loop of bowel is injected. In either instance, a sufficient amount will cause death. Much of the normal contents of the intestinal canal, as the peptones, are poisonous when directly injected and must be changed in the process of absorption from the intestinal tract before it is converted from a poisonous substance into nutrition for the body cells. Experiments, then, based on injection of material from an obstructed loop necessarily are misleading. The symptoms can hardly be due solely to an abrasion of the mucosa as then we would expect symptoms of intestinal obstruction whenever there was an ulcer of the intestinal tract or injury to its mucosa. If due directly to bacteria, obstruction should be more rapidly fatal in the ileum than in the upper part of the intestinal tract. This has been demonstrated by observers to be the reverse of the facts. It seems that we have neglected the fact that the mucous lining of the bowel is chiefly glandular in function and is so situated that its circulation can be easily interfered with as by strangulation, volvulus, etc. This is not true of the thyroid, liver or other glands important to metabolism. If we were to interfere with the circulation to the thyroid for about eighteen hours, as occurs often in volvulus or in strangulation, there would probably be a very material perversion of the metabolism in that gland. If the intestinal circulation is blocked we may have a right to expect some perversion here. It would seem that the toxic product is due to some perversion of the metabolism of the mucosa either in absorbing the material that ordinarily would not be absorbed, or else in directly producing some toxic product itself. It is likely that this perversion may be stimulated by the excessive amount of bacteria or by the interference with the circulation, or by a combination of these two. My associate, Dr. C. C. Coleman, and I did experiments on ten dogs, completely devascularizing a definite segment of intestine in each instance and wrapping it with omentum. In five of these dogs tapes were applied at each end of the devascularized segment and in the other five no tapes were applied. Of the five dogs with tapes in two instances perforation and septic peri-

tonitis with death occurred. Of the other dogs, one lived three days and two of them thirteen and fourteen days. In the five in which no tapes were applied one died twenty-seven days after operation and the others were killed at a period ranging from fifteen to twenty-two days after operation. The complete destruction of circulation had but little effect on the obstruction, so it would seem that partial interference with circulation and not its complete obliteration is the dangerous condition.

DR. FRANK D. GRAY, Jersey City, N. J.: While undoubtedly the loss of fluids is a sufficient cause and perhaps the usual cause of death in these cases, it seems to me that clinical experience demonstrates that there must occasionally be some other element producing the fatal result. I have a case in mind which occurred in my own practice early last year, a young woman, aged about 30, who manifested symptoms suggestive of intestinal obstruction, but not conclusive. There had been practically no vomiting. She had vomited slightly a few times during the two or three days preceding, so that whatever occurred could not be charged to loss of fluids. The fact that there had been only slight vomiting led me to be very uncertain as to actual intestinal obstruction. This patient had had an appendectomy and oöphorectomy performed four years before. A median incision had been made. She had attacks of colic and constipation in the meantime. I concluded to wait until morning to be certain of my diagnosis. Then she was verging on collapse. I rushed her to the hospital and operated on her, but she died in three hours. The operation was a brief one. I found a volvulus, with a band of constricting adhesions. It required no resection. The bowel was in good condition. The patient was dying before operation, and simply went on dying after the operation. This patient could hardly have died from loss of body fluids. It seems to me that the death must be charged to a toxemia or shock pure and simple. I think that some patients die from shock, and the practical lesson to be drawn from the case is that we ought never to delay an operation when a diagnosis of intestinal obstruction is made. It is better to open two or three abdomens unnecessarily than to let one patient die because we are not absolutely sure of our diagnosis and hesitate to operate. With regard to ileus, in postoperative cases, I think we cannot always be sure that we are dealing with an ileus. About three weeks ago I operated on a patient who had a perforative gangrenous appendix with a general peritonitis. Within thirty-six hours after the operation the patient began to vomit fecal matter quite profusely. I at once recognized the obstruction, but could not be sure that it was an ileus. I opened the incision and found a kink of the intestine, the bowel being sharply angulated by fresh adhesions. I liberated the adhesions and had considerable difficulty in returning the distended intestines into the peritoneal cavity, much more so than in the first operation. The patient is well to-day.

DR. MAX EINHORN, New York: Some experiments which I made have some bearing on the present topic. About five years ago I was interested in the value of the *x*-ray in finding out the place of obstruction in the intestine. I administered large amounts of bismuth and then made skiagrams. I made experiments on frogs because the frog can easily be kept in water and does not require much food. I ligated the stomach in one at the pylorus, in another I ligated the duodenum, in still another the middle of the small intestine, and ultimately in one the middle of the large bowel. I kept all the frogs and also had one control frog. I injected bismuth into the stomachs of all of them and kept them all in water, examining them each day with the Roentgen ray. I looked to see what became of the bismuth; how far it progressed; whether it had passed beyond the point of obstruction. I found that all of the frogs were alive except the control frog. I do not know why this one died. The other frogs were alive at the end of a week. I published my experiments and the results in the *New York Medical Journal* (May 18, 1907) and I stated that the site of the obstruction can be ascertained by giving a large amount of bismuth and then making skiagrams every day, to see where the bismuth stops. The interesting part of the experiments was that these frogs lived in water. There was no loss of fluids. The absorption of body fluids could go on just the same, and that is the reason why I think these frogs did not die. I found a slight dilatation above the obstruction. The ligature was applied so that the circulation was not obstructed, but simply the lumen of the bowel. I think that that harmonizes very well with the results of the experiments of Drs. Hoguet and Hartwell and, as they say, if we have really an obstruction which is not interfering with the circulation, then the addition of water or fluids to the system is of very great importance, and can and will prolong life. In most cases of ileus, however, there is always interference with the circulation, and that is why these cases do not terminate in the same manner as do these experimental cases.

DR. J. A. HARTWELL, New York: The aim of our work was to study certain points advanced as being concerned in the cause of death in intestinal obstruction. Bacteriemia had been mentioned as such a cause. Our first work proved that this is not a necessary cause. A series of nine dogs were studied, and bacteriemia was proved not to be the cause of death in these animals. Other authors had stated that toxic elements are absorbed into the circulation and cause death. In our attempt to study this phase of the question we discovered the important rôle played by the loss of fluids, due to the vomiting. One series of dogs with an intestinal obstruction showed marked abnormalities and died in a comparatively short time. A second series, operated in the same way, received large quantities of salt solution, remained in comparative health and lived for long periods. This proved to us, conclusively, that the loss of water played a very important rôle. As Dr. Horsley stated, the fact that death results when the intestinal contents of one animal are injected into the blood of another animal does not prove that the fatal factor here is concerned in the death from intestinal obstruction. It has been shown that the normal intestinal contents are of great toxicity, if they be injected into the blood of another animal. We wish to emphasize in this discussion, that we have worked only with a simple obstruction, and not with a strangulation. The points of difference in these two conditions are very great, and require further study, which we are now undertaking. We find no evidence in simple obstruction to support the theory of the absorption of toxic material as a cause of death. The enormous loss of water due to the vomiting is the essential factor, and any toxemia is unimportant as compared to this, and possibly only a secondary result of it.

THE RESISTANCE OF THE PATIENT AS A GUIDE TO OPERATIVE PROCEDURE *

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I. INHERITED LONGEVITY

The unit of the human body is the individual cell. The absence of resistance by these individual cells to those influences which lessen or destroy their power for the reproduction of cells like themselves, in its last analysis, means death. The relation of these individual cells, which in the present state of our knowledge is unknown and unknowable, to premature impairment or destruction is the real conservator of life, and we speak of its highest manifestation as inherited longevity. The usually accepted proposition is that the various manifestations of disease—acute and chronic—are but the effort of natural laws making for recovery.

Just how far these supposed recuperative processes may proceed without compromising the safety of the patient is of the highest importance, and this is the problem which demands answer by the physician and surgeon when he decides on the course he will pursue, for on his decision may hinge the issue of life and death. It is his province to determine how far Nature can be trusted,

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and for him to know the opportune moment for wise interference.

When recovery follows disease, accident or previous operation, then the observer has some rational basis for the belief that the power of vital resistance is more likely to assert itself than when the patient has never passed through such an experience. Common observation discloses the fact that certain individuals reach an advanced age with practically no serious illness. It is equally obvious that an equal if not larger percentage of individuals live to old age, who have not escaped repeated illnesses, but have survived the consequences. In one case they present unusual immunity to illnesses; in the other they show a power of resistance to disease, which has not destroyed their expected longevity.

There is no strictly defined type of the human species which, from its physical form or general appearance alone, demonstrates the presence or absence of inherited longevity; and yet the trained eye of the physician and surgeon, with his familiarity with physiologic and pathologic conditions, enlarged by close observation and scientific study, can judge comparatively—not absolutely—of the individual resistance. Time will not permit, neither is it within the scope of my purpose to consider this aspect of the case farther. So far as I have been able to look up the literature, little has been written on this subject; and what I have to offer on the bearing of inherited longevity in relation to disease and traumatic injuries is the result of my personal observation, experience and conclusions.

If the mortality arising from preventable disease and accidental influences could be eliminated, the whole problem of heredity would be much simplified, but enough information may be elicited by careful interrogation and study of individual cases to afford valuable suggestions concerning individual resistance as related to the wisdom of a specific operation, particularly one known as a border-line case. Superficial appearances may be fallacious and unworthy of acceptance and should not be accepted as standards of judgment or action. The history of families, as such, affords valuable information, as the resistance to disease is shown in their individual lives.

Some of the finest specimens of men and women, judged by the standards of perfect physical development in symmetry and form, live scarcely past the age of 50 or 55 years. Their balance of what appears to be perfect health is so sensitive that, when disturbed, they fall victims to disease, oftentimes the first illness, or are equally susceptible to accidental injuries. It frequently happens that, by inherited tendency, children in certain families possess the strength or frailty of father or mother, and this applies as well to their inherited longevity.

Again, the fact is entitled to consideration that individuals and families enjoy immunity from, or special susceptibility to, infectious diseases and infections after injury. An exemplification of this truth is found in the individual experience of some surgeons, who survive a long career without infection, while their assistants fall victims to a similar exposure, and *vice versa*. Out of numerous other features which clamor for expression, I shall mention but one, namely, the necessity for ascertaining in every case, if possible, whether the individual possesses the hemorrhagic diathesis. It is, therefore, safe to assume, other things being equal, that the inherited tendencies noted in families and in individuals offer evidence which the operator should summon to his aid in all cases, particularly in serious emergencies, in determining the probable status of the patient, with reference to any operation, which cannot be tested by other standards.

II. RECOVERY FROM SERIOUS ILLNESS

The recovery from serious illness furnishes one of the most precious guides to surgical procedure in doubtful cases. When the history of the patient shows recovery from one or more previous attacks of serious illness, it increases the chances of recovery after grave operation, in which it may be impossible to predict the consequences by any other standard of comparison. So, too, the recovery or repeated recoveries from minor ailments is suggestive that the individual possesses a high degree of resistance, and thus fortifies the judgment of the surgeon on determining on a certain course of surgical action. Chronic diseases, sometimes of long continuance, are not necessarily incompatible with inherited longevity. This goes to prove that the highest standards of health are no guarantee to long life, and, considered alone, chronic illness does not contra-indicate surgical procedures. Incomplete recovery after sickness does not vitiate the law of inherited longevity, but when often repeated tends to establish the inference. Patients with such conditions may, and often do, hold out greater expectation of recovery after operations than the typically healthy to whom I have referred, who fall victims to the first onset of disease or so often succumb to surgical operations. In surgical conditions these sufferers often inspire a hope—not otherwise attainable—and justify the operator in undertaking what would otherwise be regarded as a forlorn attempt. It is well to remember that the clinical history of such ailments, if available, would be invaluable aids in determining the resistance of the patient and the wise course to pursue.

III. RECOVERY AFTER SERIOUS ACCIDENTS

Here again is a valuable and trustworthy evidence of the resistance of the patient. The graver the accident, the more difficult and protracted the convalescence, compared with the completeness of the recovery, the greater is the evidence of vital resistance, which cannot be gainsaid. The greater the number of recoveries, the more weighty is their significance and the more useful their suggestiveness. Battle-field histories abound in the demonstration of the wonderful power of individual resistance to multiple injuries, which, followed by recoveries little less than supernatural, confirm the possibilities of overcoming what would naturally be regarded as unsurmountable surgical perils.

IV. RECOVERY FROM PREVIOUS SURGICAL OPERATION

Closely allied to the preceding group these recoveries have their special significance. The more serious and the more frequent the operations, the more valuable as guides do they become under new surgical complications. If the clinical facts are available they afford a valuable adjunct to the exercise of wise judgment, which is or should be the cardinal virtue of the operator. In latter-day surgery most operations are performed in hospitals, and that makes more accessible the history of past experiences. Unlike the traumatism following accidental injury, these procedures, be they operations of choice or necessity, are not to be entered on without due consideration. The possibilities of shock, hemorrhage (the latter too little appreciated), the risk of anesthesia, the possibility of final recovery, all enter into the problem and demand careful consideration.

V. PRESENT STANDARD OF HEALTH

Without entering into detail, the present health of the individual, as suggestive of individual resistance, must

have due consideration. Want of knowledge in all these particulars, is no excuse in charging a failure of surgical endeavor to the mysterious law of an inscrutable Providence. This consideration implies a careful inquiry into the condition of the nervous, circulatory, secretory and excretory organs of the body, with an appreciation of organic or functional derangements as accessories—important in the final analysis of cases which make for the resistance or want of resistance in the individual case. This embraces a wider field of inquiry than the scope of this paper intended, but, nevertheless, is imperative.

VI. RELATION BETWEEN INDIVIDUAL RESISTANCE AND THE VARIOUS FACTORS IN THE OPERATION

The relation of the resistance of the patient to the time taken for an operation, the shock incident to it and the anesthetic employed is of the highest importance and difficult to determine in advance. These are factors which tell mightily on the resistance of the patient. The time of every operation should occupy the least possible space compatible with thoroughness. No doubt many a desperate undertaking has failed from this cause, and too often a tardy operator has no conception of the reason. So, too, the use of the anesthetic requiring the skill and judgment of an expert is so often entrusted to a recent graduate. It is not my purpose to enlarge on this proposition, as the destructive influence of chloroform and ether anesthesia on cell-structure is being appreciated, and the greater safety of the nitrous oxid-oxygen mixture as a substitute is recognized. When these two factors are duly appreciated, there will come greater safety to those who, from every consideration, are entitled to the best skill and wisest judgment attainable.

Since this paper was prepared, Bloodgood, of Baltimore, has published in the *Annals of Surgery* for May a most valuable and instructive article of over twenty pages, which discusses in larger detail the matters of which I made brief mention. His masterly comments apply largely to those physiologic and pathologic principles which underlie the practice of surgery, and exemplify in no uncertain sound those doctrines which favor or militate against operative procedures.

It was my purpose to make some deductions regarding the resistance of the patient under operation, judged by the standards mentioned in my paper, and their subsequent clinical histories. These I will defer to some future occasion, in the belief that the farther time allotted to this paper will be more profitably spent in its discussion.

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ABSTRACT OF DISCUSSION

DR. HENRY ALBERT WADE, Brooklyn: A prominent factor in success or failure is inherited longevity. We cannot choose our ancestors, but we can do a great deal so that coming generations may have a larger degree of resistance than we at the present time enjoy. It is important that we should take careful histories. This point was forcibly brought to my attention when a pupil nurse at the Williamsburg Hospital was suffering from an inflamed gall-bladder. Scarlet fever some years before had left an inflamed endocardium. While suffering pain in the abdomen she had continued her duties. Her general condition was poor, she was anemic and had been suffering severely from pain for several weeks' time. In looking into the history I learned that five years ago while still suffering unduly from the heart lesion, she had undergone an operation for acute appendicitis and had made a good recovery. Bearing this fact in mind I felt that it would be entirely safe to open and drain the gall-bladder. Had I not found by going over her history carefully that she had reacted readily from the previous operation I should not have been inclined to operate for the gall-bladder condition. The young woman made an uninterrupted recovery. The anesthetic is a very important factor in the matter of a smooth recovery. For the past two years I have used ether by the drop method and I find that patients suffer less from vomiting and shock than if etherized by the closed method. We all agree that chloroform is an unsafe anesthetic. Nitrous oxid gas requires a skilled anesthetist and that in a general hospital is difficult to secure. The duration of the operation is an important factor in the question of recovery.

DR. H. G. WETHERILL, Denver: I shall take this matter up at the point where Dr. Wade left off. In preanesthetic days the time consumed in operating was important. Now it is not considered so important, and yet, there are many cases in which it is so. Until a comparatively short time ago in the south and west, chloroform was the anesthetic of choice. It is only within the last few years that we have fully appreciated that the great dangers of chloroform are not the primary risks, but the secondary poisonings due to this anesthetic. I think the time has almost come when the great medical bodies of our country should unite in saying that chloroform is at no time and under no circumstance a safe anesthetic. Only in carefully selected and special cases should it ever be used, and always with the possibility of a late chloroform poisoning before us. Even in obstetric cases it is not safe. I saw in Johns Hopkins Hospital in Baltimore last week the specimens from a case presented by Whitridge Williams in which death occurred from late chloroform poisoning in an obstetric case.

DR. H. J. BOLDT, New York: The element of time which has been alluded to is of very great importance if one considers the time wasted, absolutely wasted, for which there is no occasion at all, particularly before the operation begins. Often the preparation of the patient, instead of being done before the anesthetic is begun, is not done until the patient is under the anesthetic. If fear is inherent, it is always of the utmost importance. Whether I undertake an operation is dependent on this fact. If there is any doubt on my part as to the outcome of an operation, and if, on the part of the patient, the element of fear predominates, I prefer that the patient be operated on elsewhere.

DR. THOMAS S. CULLEN, Baltimore: I agree with Dr. Boldt in the matter of fear. It is better either to let the patient alone or keep him under observation until the fear is overcome. In regard to speed, I have noticed that in operation for cancer of the cervix the patient will do well for perhaps an hour and a half and in the next fifteen or twenty minutes there will be collapse. Dr. Wetherill has spoken of the giving of the anesthetic. I would go a step further and say that it is absolutely necessary for us to have trained anesthetizers in every institution. It has been my good fortune to have an expert anesthetist for the last twelve years in the institution with which I am connected and the operator pays no attention whatever to the anesthetic.

DR. WALTER B. CHASE, Brooklyn: The factor of time cannot be too strongly insisted on. I discussed that matter sometime ago in an article published in the *American Journal of Obstetrics*. The time element is so important that I am confident that surgeons have failed and have not known that prolonged anesthesia was sufficient to kill the patient. The element of fear is a matter entitled to consideration. To allow a delicate woman to worry about an operation for three or four days increases the liability that the operation may fail, particularly in border-land cases. If I cannot relieve a woman of fear I never tell her of the operation until within a few hours. My purpose is to urge physicians to prepare themselves by a careful diagnosis and every accessory, to ascertain in advance whether it is wise to operate in a given case.

An Argument for Vaccination.—During the first three months of 1912 there were reported 283 cases of small-pox in Michigan. The vaccination histories of these cases are as follows: Seventeen patients were vaccinated between 1 and 10 years previously; five between 10 and 20 years previously; one, between 20 and 30 years previously; two as far back as between 50 and 60 years previously, and several "in childhood," "years ago," "doubtful, if ever," etc.; but 245 had never been vaccinated. It costs Michigan $150,000 a year to take care of indigent small-pox patients and to protect the unvaccinated.—R. L. Dixon in *Detroit Med. Jour.*

HYSTEROTOMY *

JOHN B. DEAVER, M.D.
PHILADELPHIA

During the past eight years I have opened the uterus through the abdomen for various conditions in fourteen cases. The satisfaction with which I have been enabled in this way to deal with varying kinds of pathology together with the rapid and uneventful recovery in each instance, has led me to believe that in hysterotomy we have an operation deserving of wider application than obtains at this present time, being at once safer and less mutilating than hysterectomy, and possessing the marked advantage in the case of young women of preserving the power to conceive.

Of the use of this operation under its common name of cesarean section in cases of late pregnancy complicated by a markedly contracted pelvis, I shall say little. It is too well recognized at this present time as the operation of choice, and the mortality in competent hands has fallen so low as in suitable cases to be almost negligible. There is scarcely any operation which is at the same time so spectacular, so easy of performance for the surgeon and so safe for the patient. Aside from the presence of a competent surgeon and the necessary simple paraphernalia, its success depends chiefly on the early recognition of the necessity for operation before the strength of the patient is too exhausted to endure surgical intervention.

I believe further that the operation should be extended to include all cases of placenta prævia. It may not be out of place in passing to state that it was my privilege to be one of the first to perform this operation for this condition. I had to endure much criticism for my advocacy of hysterotomy in this condition, but I have had the satisfaction of having my position endorsed subsequently by many of our ablest gynecologists. I am aware that, by the use of the various dilating bags, the hemorrhage may often be checked and delivery satisfactorily effected, but I have also known this method to fail of its purpose and result in the death of the patient from hemorrhage even in the hands of the most skilful obstetricians. There is always a feeling of insecurity when dealing with placenta prævia by this method. Even those who advocate the bag dilator feel great relief when the patient is out of danger. On the other hand, one may approach the operation of hysterotomy in this condition with the same assurance that he feels concerning cesarean section under other circumstances. The abnormal implantation of the placenta does not add to the gravity of hysterotomy. It can be performed in the same manner and with the same absolute control over hemorrhage as in any other abdominal operation on the uterus. Is it not therefore a more soundly surgical form of treatment? Why should we hesitate in advocating it? If operation is done at the proper season in the late cases, the child also can be saved, which is not usually the case in delivery by any other method. I have had in recent years five cases of placenta prævia, four of lateral and one of central implantation, all of which I have treated by hysterotomy with the utmost satisfaction. In the case of central implantation in which the placenta widely overlaps the outlet of the uterus, it is more strongly indicated than in the marginal implantation, but the difficulty in most cases of determining accurately in advance the exact situation of the placenta should make us chary of trusting in the method of dilatation of the os.

There is a field for this operation also in neglected cases of the toxemia of pregnancy. In September, 1910, a patient came under my care who had been suffering for some months with marked toxemia as shown by vomiting, loss of weight and strength, increasing blood-pressure, nephritis and impairment of vision. I operated at once under intraspinal stovain anesthesia. The fetus was dead and the amniotic sac contained dark-colored fluid. The placenta and gestation sac were removed without difficulty; the uterus was repaired without much hemorrhage, and the patient made a rapid and satisfactory recovery. The blood-pressure, which was 185 before operation, in a week fell to 168. The eye-grounds prior to operation showed exudation and hemorrhage. Four days after operation examination showed the hemorrhage to be absorbed and the disks fairly well defined. The remaining symptoms showed the same rapid improvement.

I have the notes of a similar case which was treated by hysterotomy by my brother, Dr. H. C. Deaver, with equally good results. Such cases should perhaps have been treated earlier by evacuation of the uterus through the usual methods of inducing premature labor, but when the situation has become acute and prompt relief is necessary, hysterotomy is more rapid and at least as safe as any method of inducing abortion, if not safer. In fact, there is less danger of infection in operating through the abdomen than in the introduction of any foreign material through the uterus by way of the os. When time and circumstances permit I should always prefer hysterotomy to manual removal of the fresh placenta, which I regard as one of the most dangerous operations that can be performed, on account of the great and unavoidable danger of introducing infection as the hand is carried up through an area impossible of complete sterilization to one of the most dangerous of all areas in its susceptibility to infection and the futility of its treatment. When convulsions have occurred as the result of toxemia I should commend the operation as the procedure which is most expeditious in evacuating the uterus and giving the patient the best chance of recovery.

An occasional indication for hysterotomy is the inability of the operator after opening the abdomen to distinguish between a soft symmetrical myomatous uterus and a pregnant uterus. Every man who has done much pelvic work has occasionally found himself in this predicament and can agree with Maurice Richardson when he said that he could not always tell a pregnant uterus when he had it in his hand. It has well been said that "sometimes fibroids cry." It is a humiliating mistake to remove a pregnant uterus under the belief that it is a fibroid tumor. I have not yet had occasion to regret this mistake, but I have on several occasions closed the abdomen in the belief that the patient was pregnant, only to be compelled subsequently to remove a soft myomatous uterus. Usually the history, if we can be sure of it, together with the color and consistency of the uterus, will determine the condition. I would not incise a uterus that I believed to be pregnant; but, if I believed it to be myomatous and was not sure in regard to the possibility of pregnancy, I would incise and act in accordance with what the incision showed. In December, 1911, I operated in a case of somewhat this character.

History.—The patient was a married woman, 32 years of age, who had had one child ten years previously, but had not

* Read in the Section on Obstetrics and Gynecology of the American Medical Association, at its Sixty-Third Annual Session, held at Atlantic City, June, 1912.

been pregnant since. The menstrual flow had begun at the age of 14 and had been regular until 18, since which time it had been irregular, occurring every two or three weeks accompanied by severe dysmenorrhea. About one year before admission to the hospital the dysmenorrhea became almost unbearable. In February, 1911, a mass had been felt and diagnosed as cyst of the left ovary. Operation was advised, but declined. Between the periods the patient had pain in the left lower abdomen, especially on exertion. She had had a moderate yellowish discharge off and on for the past year. Two days before admission she was seized with severe pain in the lower left abdomen, extending over to the right, and relieved only by opium. She had missed her periods in September, November and December, but had suffered severely for about six days at each time.

Examination.—The abdomen was soft; an irregular ovoid mass could be felt in the lower abdomen extending slightly above the pubes. A mass about the size of an orange could be distinctly felt on the left side. There was tenderness but no rigidity on palpation. By vagina a firm mass which was not tender could be felt filling the culdesac. There was a small tender mass in the left vaginal fornix and on the right several smaller masses apparently connected with the uterus.

Operation.—The entire uterus was found enlarged to about the size of a three months' pregnancy. A subserous fibroid the size of an orange extended from the left cornu. Adjacent to the right tube was a small subserous fibroid, and in the mesosalpinx a small cyst. Myomectomy was performed on the two subserous tumors and the cyst removed. It was questionable whether the uterus was or was not pregnant. I incised and removed a fetus. As no other fibroids appeared to be present the incision was repaired, the abdomen closed and the patient recovered.

I feel that this was better than to remove the uterus or to close the abdomen in doubt as to its contents when the history of the patient was taken into consideration.

There is another class of patients who cause the surgeon anxiety, namely those who suffer from bleeding due to polyps of the endometrium or pedunculated intra-uterine growths. I have more than once removed a uterus with a strong suspicion that it was the seat of an early carcinomatous change in the fundus only to find that a benign pedunculated growth in its interior was the cause of the symptoms and hemorrhage.

I am a believer in diagnostic curettage in certain doubtful cases. If microscopic examination of the tissues removed shows carcinoma, our course is clear. If, on the other hand, no malignant changes are found, but curettage does not cure, what should we do? In some of these cases the uterus is scraped time after time without relief. This may be due to adenomyoma, so well described by Cullen, to adenoma of the endometrium or to chronic hyperplastic endometritis and certain poorly understood changes of the myometrium and its vessels, or to the fact that a pedunculated growth is present which escapes the curet. It is not always easy to scrape these away and especially if the curettage be done with that gentleness and care which should always be used in this operation. Twice I have opened the uterus under these conditions and have by direct inspection been able to conclude that no carcinoma was present, but only a polypous condition of the endometrium which could be dealt with under direct view far more completely and satisfactorily than by the blind insertion of the curet through the os. The subsequent history of both these cases was satisfactory and in neither case was the convalescence more alarming than in ordinary curettage.

On several occasions I have observed uterine hemorrhage due to the presence of one or more fibroid nodules immediately beneath the endometrium; could we determine beforehand the non-existence of malignancy, these nodules could readily be removed through the incision into the uterus. These cases after one or more curettages usually come to hysterectomy as the only method of cure. While it is not possible to remove a fibroid of this character by curetting, one can easily do so when the interior of the uterus is laid open to inspection.

The method to be employed is as follows:

The patient is placed in the Trendelenburg position and the abdomen opened by a straight incision through the right rectus muscle. The intestines are packed off with moist gauze pads. The uterus, if large enough, is delivered and well packed off posteriorly and, below, anteriorly. If the uterus is not large enough to deliver out of the wound, it is well surrounded on all sides by gauze packing. In the case of pregnancy the operation is completed by incision of the anterior wall of the uterus and removal of its contents. In other conditions the incised walls are spread apart and the interior of the uterus examined. Curettement or submucous myomectomy may then be done if indicated.

The incision in the uterus is repaired by a continuous buried suture of chromic catgut which does not penetrate the endometrium. A superficial running suture of the same material completes the closure.

My experience with these few cases has been so satisfactory as to warrant bringing this operation up for consideration, in the belief that it should be kept in mind and employed in certain selected cases more often than is now the case. I wish especially to urge that placenta prævia must be considered an indication for hysterotomy which is to be given the preference over any other method of delivery. In the toxemias of pregnancy in their later and more severe stages it is to be seriously considered as a rival of less radical measures. In certain myomatous uteri and in the presence of pedunculated intra-uterine growths or endometrial changes, we may on occasion find it of great help in relieving our patients most expeditiously of their symptoms.

The chief contra-indication is the presence of intra-uterine infection, either demonstrated or strongly suspected. I would not at the present time open a uterus in the interior of which I feared to find infection. If this precaution is observed the operation is one of extreme simplicity and low mortality, but should be undertaken only by an experienced surgeon who is a master of intra-abdominal technic.

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ABSTRACT OF DISCUSSION

DR. E. G. ZINKE, Cincinnati: When, eleven years ago I wrote a paper endorsing the recommendation of cesarean section for placenta prævia, there was not a single voice in my support in the association before which I read the paper, the American Association of Obstetricians and Gynecologists. For two years thereafter I was much abused in the medical journals of this country as well as in some of the journals abroad; and some of the best authors of Europe, among them Schauta of Vienna, wrote against that which I had advocated. Two years later, when I spoke before the same body of the "Limitations of Cesarean Section" there was no dissenting voice. Six or seven years later the American Gynecological Society began to endorse the operation for placenta prævia and to-day cesarean section is performed on every case of placenta prævia in some of the clinics abroad. Dr. Deaver has had to bear some of the brunt of the battle, and he has stood it so bravely that I have lauded him for it in the past. While I support Dr. Deaver in the main, I do not advocate cesarean section in every case of placenta prævia or in all cases of puerperal eclampsia.

DR. JOSEPH B. DELEE, Chicago: To make a sweeping announcement that all cases of placenta prævia should be treated by cesarean section is in my opinion entirely too broad. Years ago I was one of the first physicians in America, that is of the younger men, to perform cesarean section for placenta prævia. I am still doing it and under certain limitations, which the few minutes at my disposal do not allow me to present; it is an operation of great satisfaction. A large percentage of placenta prævia cases can be treated by the older methods with very satisfactory results to both mother and child. The second point on which I wish to differ with Dr. Deaver is hysterotomy for incarcerated placenta. I fear that I did not hear aright if Dr. Deaver means that in the treatment of post-partum hemorrhage with an incarcerated placenta opening the abdomen even with a surgeon of the greatest ability to do it is less dangerous than the removal of the placenta from below. I take most decided objection to that. The man who is capable of opening the abdomen safely is ten times more capable of removing an adherent placenta safely from the vagina. If the placenta is pathologically adherent it may possibly be desirable to open the abdomen and remove the placenta if unsuccessful from below. Again, I might make a qualification that if the uterus is infected and the placenta is in the uterus, hysterectomy may be safer than removing the placenta. When we cannot determine the diagnosis — whether there is a tumor present or a pregnant uterus — it is safe to cut into the uterus to see. I have done it myself. Six or eight years ago in a case in which I could not distinguish a fibroid from the pregnant uterus I made an incision, found the pregnancy, sewed up the wound and delivered the woman at term. In another case I did vaginal hysterotomy because I could not tell whether there was a fibroid or pregnancy. I found a fibroid and removed it by laparotomy. In regard to hysterotomy in cases of toxemia, Dr. Deaver made no mention of the induction of abortion and in urgent cases of Dührssen's operation, commonly known as vaginal cesarean section. It is a procedure that requires no discussion.

DR. H. J. BOLDT, New York: The man who deserves the credit of having done the first cesarean section for placenta prævia in this country was the late C. A. Bernays of St. Louis. The one who brought cesarean section for placenta prævia to notice at all was von Halbertsma of Holland. There is unquestionably a field for an abdominal opening of the uterus but that occasion arises very seldom. In the case of myofibromas, to which Dr. Deaver has alluded as a question of doubt between pregnancy and myoma, I am in exactly the same position myself as Dr. Deaver. I have declined to remove a myomatous uterus because I first thought I was dealing with a pregnant uterus. Cases of submucous polypi in my opinion should be treated for diagnostic purposes by vaginal hysterotomy. It is practically entirely devoid of danger in the hands of a competent man. There is no occasion whatever for exploration by the abdominal operation.

DR. E. E. MONTGOMERY, Philadelphia: The value of this procedure I learned from experience more than twelve years ago when I operated on a young single woman, 22 years of age. I curetted the uterus which was considerably enlarged. As the abdomen was to be opened I made an incision through the fundus and found the uterine cavity filled with a number of grape-like masses and removed the entire uterus. Ten years ago in this city I operated on a patient in whom I had no reason to expect from the history she gave that she was pregnant; as she was suffering from profuse bleeding, I curetted the uterus, then opened the abdomen to shorten the ligaments, and to my very great disgust I became satisfied that she was pregnant. I incised the fundus and cleaned the cavity by removing the mass. I agree with Dr. Deaver as to the impossibility of always ascertaining the diagnosis of pregnancy. Within the last week, before a number of men at Jefferson Hospital, I curetted a retroflexed uterus to which I attributed the enlargement of the fundus. When the abdomen was opened to shorten the ligaments I was convinced that the uterus was too large and soft to be other than in an early stage of pregnancy. I cut through the fundus of the uterus but there was no pregnancy. The advantage of this procedure is that in some cases we may curet the uterus and by inspection make sure of its condition. Not infrequently the wiping out of the uterus with a gauze-wrapped finger will be more effective. The procedure is of great value in cases of fibroid within the body of the uterus in women of child-bearing age. In some cases the growth can be more safely removed by incision of the fundus through an opening in the abdomen, the incision being a less dangerous procedure than would be the removal of such a growth through the contracted cervix.

DR. A. GOLDSPOHN, Chicago: As to the merits of this operation for placenta prævia I will say nothing because I am not competent to judge. It is indicated in those instances which have been mentioned of benign tumors of the uterus when it is not possible to distinguish between pregnancy and a neoplasm. Then in other cases in which persistent hemorrhage exists after repeated curettements, if an abdominal section is necessary, if for some other reason the abdomen has to be opened anyhow, then the uterus should be opened and the operator should be complete in what he does. But if there is no reason for opening the abdomen except to make sure of emptying that uterus, then I think the abdomen should not be opened because the cervical incision will give all the opportunity we need. It does not matter how large that uterus be, even though it be a post-partum uterus, the gynecologist and obstetrician can make use of the most important eye that he has — the finger. He can with this explore the entire interior of the uterus, often finding polypi or other reasons for persistent hemorrhage. He can in the same manner remove adherent placenta because he "sees" with the finger the condition present.

DR. C. S. BACON, Chicago: Abdominal hysterotomy for diagnosis, I believe, is rarely necessary. Either vaginal hysterotomy or the examination through the artificially dilated cervix is generally sufficient. Referring particularly to the obstetric uses of hysterotomy that Dr. Deaver has spoken of, if Dr. Deaver's teaching should go out as the obstetric teaching of this country, there would be a state of affairs in two or three years that would be appalling to contemplate. That all cases of placenta prævia should be treated by hysterotomy is a proposition impossible to conceive of. Only a small proportion, a minority, of the cases of placenta prævia are central. Rarely hysterotomy may be indicated here. Cases of lateral placenta prævia which frequently bleed very freely can be treated safely by version and traction or by the bag.

DR. RUFUS B. HALL, Cincinnati: I will endorse many of Dr. Deaver's points, but there are one or two to which I would like to call the attention of the Section. We ought not to let this paper go out with our endorsement of opening the abdomen and doing hysterotomy for diagnosis and for the removal of retained placenta. We ought not to let it go out that we would open the abdomen and then the uterus to make a diagnosis between simple myoma and pregnancy. The uterus should not be opened unless the abdomen were opened for other conditions and the uterus were found to be enlarged and it was a question as to diagnosis. Then I would say open the uterus. But we ought not to open the uterus merely to determine whether the woman was pregnant or had a soft myoma. The statement ought not to go out as the sentiment of the Section that we should open the uterus to make a diagnosis in suspected malignant disease in the fundus. There are other methods that are safer and as accurate. If there were no other urgency than the question of pregnancy a few weeks would settle that to the satisfaction of the doctor.

DR. S. M. D. CLARK, New Orleans: Dr. Deaver has presented an operation of distinct value, through which many grave mistakes will be avoided. In central placenta prævia, if surgical facilities are available, it is the operation of choice. I do not believe that Dr. Deaver means that all placenta prævia cases should be dealt with in this way. Dr. Russell of Hopkins, some seven or eight years ago, brought out the importance of this procedure in diagnosing obscure cases of hemorrhage from the uterus. In these obscure conditions of the uterus it is unquestionably of value. I have found small, submucous growths in this way, that could not have been detected in any other. One case which I had would especially illustrate its value. A physician brought a woman suffering from continuous bleeding, he having some two months prior curetted for

diagnostic purposes. These scrapings were examined by a supposed competent pathologist who found carcinoma. The patient came to me for Wertheim's radical operation. Under an anesthetic the cervix showed no evidence of malignancy, and the scrapings were negative. Still, I felt that I might not have curetted the exact carcinomatous area. Bimanually, I felt a soft mass on the left side which I thought was an infected tube, following the previous curettage. Abdominal section showed an ectopic gestation which was removed. This carcinomatous finding, however, worried me, so rather than take the uterus out without further evidence, I did a hysterotomy, finding a perfectly normal endometrium and saved the uterus. The pathologist had made an error, most probably mistaking decidual cells.

DR. JOHN A. MCGLINN, Philadelphia: I have no quarrel with Dr. Deaver on the surgical views expressed in his paper and in the main agree heartily with him. But when he enters the obstetric field and advocates such radical views I feel that the majority of us take serious issue with him. To say that every case of placenta prævia should be subjected to abdominal cesarean section is to my mind a very dangerous teaching. A few cases of placenta prævia I grant are best treated by abdominal section. But these cases are comparatively few and the majority of cases can be best treated by the older and tried obstetric procedures. We must not forget that the vast majority of labor cases are still treated by the general practitioner and to have him, a specialist in obstetrics but a tyro in abdominal surgery, section all his cases of placenta prævia would be simply to invite the slaughter of the innocents. That all cases of eclampsia should be treated by section is utter rot. If it is necessary to empty the uterus rapidly — and few of us will admit it necessary or even wise in the majority of instances—we have in vaginal cesarean section a safer and better operation than abdominal section. Toxemic cases are, as a rule, bad surgical risks and there is certainly less shock and danger of infection in the vaginal operation. In the main the best interests of the mother and child are served by the accepted obstetric treatment of elimination, control of convulsions, induction of labor by conservative means in the proper case and at the proper time. Finally, in those rare cases of adherent placenta I see no reason to consider abdominal section. The birth-canal in the normal case is sterile as far as pathogenic germs are concerned, and the placenta can be easily removed without danger of infection by the sterile hand covered with a sterile rubber glove. A man who does not understand asepsis and who would remove an adherent placenta by the vaginal route would surely infect his patient, but the chances are that she would recover, but if the same man did an abdominal section he would just as surely kill his patient. I feel sure that such teaching is dangerous and trust that it will not obtain general acceptance.

DR. THOMAS S. CULLEN, Baltimore: In the majority of cases with plenty of time and proper curettage we are able to determine the exact condition in the uterine cavity. I saw a case in consultation with a colleague a few weeks ago. The patient was 36 years of age and gave a history of bleeding for several weeks. She had been curetted by a most competent man. She had never missed her periods before and she had never been pregnant. There was a large amount of scrapings which, as a rule, is an indication of a pathologic process. I saw the scrapings later on and found that the surface was perfectly intact. You know the difference between a normal and a carcinomatous endometrium. There is just the same condition as you would see in a farm, one field would be perfectly smooth while another is overgrown and rough. In this case the surface was relatively smooth. The stroma beneath were between normal and decidual and the glands in both showed hypertrophy just as there is hypertrophy of the thyroid. This patient had been examined under anesthesia. I saw the patient with my colleague. It was thought unnecessary to make an examination since he had done it so thoroughly. We reached the conclusion of an extra-uterine pregnancy so small that it could not be determined. The doctor found an unruptured extra-uterine pregnancy of very small size. In the majority of cases you can tell from the scrapings the exact condition one is dealing with. Hysterotomy I would reserve for those cases in which such an examination cannot be made or, in which, on opening the abdomen, one is not sure of the condition, in which the uterus is large and one is sure there is not pregnancy and yet one does not know whether there is a polyp or something in the interior of the uterus. When the patient is on the table, the abdomen open and it is not possible to curet, rather than close up and have a second operation I think one ought to split the uterus and see the exact condition in the interior. I must confess that in one patient examined under anesthesia I came to the conclusion that there was some uterine growth. On opening the abdomen I was not quite sure. In that case I split the uterus and found a remaining part of a placenta. There had been an old miscarriage, but nothing to indicate this had been given in the history. The part was just like a flaccid pocket. In all cases if there be infection and the cavity of the uterus is opened from above a chance is run of infecting the general peritoneal cavity, because even if carefully walled off, there is still some chance of the uterine suture coming through. I think hysterotomy is limited to those cases in which it is not possible to make a careful examination and curettage, in which one is "up against it" and the exact condition present has to be determined when the abdomen is open.

DR. J. H. CARSTENS, Detroit: It seems to me that this question is one of mighty little diagnosis and a great deal of operation; and I, for one, want to protest against indiscriminate operation of that kind, because the men who are gynecologists and who can do those operations as successfully as Dr. Deaver are the ones who will make a correct diagnosis as a general rule and very rarely need to make such an operation. Now there are cases, no doubt, in which placenta prævia can be operated on in that way, but when it comes to an adherent placenta, it can be removed in the usual manner by men who are practiced. If, as Dr. Deaver says, men who put in their dirty hands to take out the placenta can infect the uterus, they can also infect not only the uterus but the whole abdominal cavity, and they will certainly kill the patient. Now as Dr. Boldt has said, and Dr. Bacon and these other men, with a fine Italian hand, and if necessary a Dührssen operation, one can make all the necessary diagnosis and do nearly all those operations that have been advocated in a different way. I maintain that it is a good operation, but it is very rarely indicated.

DR. HENRY C. COE, New York: As I listened to Dr. Deaver's paper I could not help recalling the old plan of diagnosing conditions inside the uterus. The introduction of tents for this purpose was a long, uncertain and dangerous process. In preaseptic days, patients were sometimes infected and died before the diagnosis was actually made. I have been familiar with incision of the uterus per vaginam for years and regard it as a valuable procedure in proper cases. Dr. Deaver called attention to intractable uterine hemorrhage in which careful examination of the scrapings was negative. In these cases it is a scientific method to split the uterus and examine the interior. The operation is so simple that I have yet to see any reaction other than from an ordinary curettement. I agree with Dr. Deaver in regard to frequent difficulties of diagnosing normal pregnancy, and like him, have closed the abdomen in several cases in which I strongly suspected pregnancy, when the condition was found to be a soft fibroid. In two instances I opened the uterus through the abdominal route fearing the existence of pregnancy, but found a fibroid. We cannot always make a positive diagnosis, but we can wait. In regard to the information found by the examination of curettings, my experience has been somewhat different from that of Dr. Cullen, both as to position and negative evidence. Obstinate bleeding, resisting all the methods of treatment, may be a legitimate indication for a radical operation, even if the pathologist submits a doubtful, negative report.

DR. J. B. DEAVER, Philadelphia: Certain points have been referred to which were not touched on in my paper. I spoke of placenta prævia and conditions of the interior of the uterus impossible to diagnose and to handle properly except by hysterotomy; I am glad there are others in the audience who agree to the difficulty of diagnosis. I feel that the best result is obtained by abdominal section. Those men who take exception to hysterotomy for placenta prævia have not told us of the poor

women dying of hemorrhage and the babies who have never lived to gasp. This does not occur if the operation is done at the opportune season, before the patient gets well into labor, before instruments have been used, before the vagina is infected and the cervix lacerated. If done early both mother and baby will be saved. So far as the toxemia of pregnancy is concerned, I did not advocate this operation in all cases, but I advise it in desperate cases. This is conservative surgery from the standpoint of the abdominal surgeon or of the gynecologist, I care not which, because we are all the same. In one case of my colleague, Dr. Harvey Shoemaker, with extensive albuminoid retinitis and convulsion, hysterotomy was done with good results. I do not know of any more dangerous operation than curettage, if great care is not exercised in the selection of the case. I have operated, as have many surgeons, in cases in which the curet was used and the woman has come into the hospital with prolapsed bowel in the vagina. Dr. Goldspohn speaks of exploring the uterus with the finger; this is not possible in all cases of the type of which I have spoken in my paper.

UNCLEAN MOUTH AND ITS EVIL RESULTS *

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Uncleanliness of the mouth is probably the indirect cause of more bodily disease than any other source. This fact has recently been forcibly set before us by such men as Hutchison, Turner, Lang, Hunter and others.

"Chronic ulcerative stomatitis," "putrid sore mouth," "fetid sore mouth," etc., as described in works on medicine, and as spoken of by physicians, are simply stages of a disease of the alveolar process and gums, popularly known as "receding gums," "sore," "spongy" or "bleeding gums." These conditions are preventable by proper daily cleanliness at the hands of the patient. They are caused by local irritants against the gums, calcareous deposits being by far the greatest factor. Any irritant, however, such as bands, rough edges of cavities and roots of teeth, rough fillings, splinters, or improper approximal spaces may be the exciting cause.

The various conditions or stages of the disease should be described under a name such as "Riggs' disease," or better still, "alveolitis." This allows of discussing the etiology, of giving the morbid anatomy in the various stages, and of describing the treatment of the various stages. These stages of what seems to be one disease are looked on by many as several distinct diseases, but the pathology and recovery both point plainly to one source.

Alveolitis is a disease of the bone which supports the teeth and involves the overlying gum-tissue, also the periosteum and peridental membranes. It results in the ultimate loss of the teeth by the destruction of the alveolar process. After the onset or initial lesion in the gums, and the alveolar process has become involved, the malady is primarily that of the bone, the soft, spongy and bleeding gums being a natural sequence. This is evidenced by the fact that the gum-tissues, although still inflamed, remain intact and nearly to their normal height long after deep pockets have been formed into the bone. The gums also promptly recover their normal health when the bone gets well or the tooth is removed. Again no amount of gum treatment, pure and simple, will cure the disease. In view of the above statements the following nomenclature has been adopted.

The disease may be described in all its phases by arbitrarily dividing it into stages, as follows:

Initial or simple alveolitis.
Non-suppurative alveolitis.
Suppurative alveolitis
Necrotic alveolitis.
Acute alveolitis.

Descriptive subdivisions are:
Chronic non-suppurative alveolitis.
Chronic suppurative alveolitis.
Necrotic non-suppurative alveolitis, which is always chronic.
Necrotic suppurative alveolitis, which is nearly always chronic but may be acute.

The subdivisions are merely descriptive of combined conditions. The suppurative and necrotic stages, both acute and chronic, display all the conditions described under the names, "chronic ulcerative stomatitis," "fetid stomatitis," "putrid sore mouth," "chronic stomatitis," etc. Insanitary conditions of the mouth undoubtedly encourage the propagation and virility of such microbes as are involved in aphtha, thrush, cancrum oris, and other bacterial diseases of the mucous membrane.

Gingivitis is always present to some degree in every stage of alveolitis and is very marked in the advanced stages. Its mildness or intensity is dependent on several things, such as the condition of the underlying bone, the character of the infection and the quantity and character of the calculus about the teeth. Mercury and other metallic poisonings intensify the symptoms as do auto-intoxications, scurvy and sordes

INITIAL ALVEOLITIS

Initial alveolitis means the beginning of the disease in the gum-margin at the necks of the teeth. It usually starts from local irritants. These irritants cause wounds in the gum-tissues, which wounds are the doors of entrance (the infection atrium) of the infectious bacteria. All the irritants mentioned, excepting tartar, simply create the wound, which may be perpetuated by microbes. Tartar, however, never ceases to be deposited and is a continuous and progressive irritant, perpetuating the disease in its simple form.

Tartar is a normal constituent of saliva and is deposited in the protected places against the gums about the necks of the teeth. If undisturbed, it in due time becomes almost as hard as the tooth and very adherent to it. It is also rough and irritating to the gums. The pressure of tartar against the gums, be it soft or hard, will in time induce destruction of the mucous membrane. This creates an open wound at the point of contact, which will bleed on removal of the deposit. These wounds, be they ever so small, are the beginning, or initial lesion of the disease, resulting in the initial stage. This condition may be slowly progressive for many years without apparent infection. It is designated as simple alveolitis or chronic non-suppurative alveolitis, and is present to some degree in almost every human mouth and in the mouths of some domestic animals.

CHRONIC NON-SUPPURATIVE ALVEOLITIS

The unremitting effort of tissues to ward off disease may for years prevent a malignant infection of these wounds. With some persons it may be for a life-time, but the ultimate end of the disease, if the patient lives long enough and the deposits are not removed, is the loss of the tooth. This process is as follows:

If tartar presses against the gums an open wound occurs and inflammation and swelling of the gum-tissue follows. This inflammation is indicative of an effort on the part of the tissues to dispose of a foreign body. Tartar cannot be thus disposed of because it is adherent to the teeth. The inflammation and swelling of the gum

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causes them to stand away from the tooth. This allows the saliva, freighted with calcareous material, to invade these spaces. Thus the deposit of tartar goes deeper and deeper, because the flesh recedes in order to get away from the irritant. This intended process of healing results in slow destruction of the alveolar process. The pockets thus become deeper and deeper until the bony support is entirely destroyed and the tooth is thrown off. During all this time the gums are more or less inflamed.

This simple or chronic non-suppurative form is so-called simply because the pus is not visible, and, as stated, is the most common of all forms. When, however, a malignant type of infection finds encouraging environment in one of these chronic non-suppurative wounds, it is most apt to be suppurative in type (staphylococcal or streptococcal). This is much more rapid in its destructive progress than the non-suppurative form. When suppuration exists in one place it is apt to be found in several places, and many times it is found in all the sockets. This condition constitutes suppurative alveolitis or so-called pyorrhea alveolaris.

SUPPURATIVE ALVEOLITIS OR PYORRHEA ALVEOLARIS

When pus is exuding from the sockets, it may be in such quantities that it is easily seen, or it may be easily pressed out with the fingers. On the other hand, it may be in such small quantities that it can only be seen with the aid of the microscope.

Once the suppurative type has begun, it may progress without the necessary presence of the original irritant or of calculus on the roots. A great many teeth are lost from this suppurative type of the disease. In consequence, the name "pyorrhea alveolaris" was originally given it, but this name indicates only one particular stage.

The absence of deposits on the roots of some of these teeth has led many authors to say that calculus or other local irritants have little or nothing to do with the disease. They say that it is systemic in its origin, that it is an accompaniment of the uric acid diathesis or a result of arteriosclerosis and its accompaniments. If, however, the complete history of alveolitis could be known, I believe, without doubt, that it would be found that the disease always starts with a local irritant and lesion. It is perpetuated by the continued presence of calculus, or of calculus and infection, or by other local irritants and infection, as above described. Those who say that the disease is caused by other than local irritants admit that these irritants must be thoroughly removed, and the pockets sterilized, or the teeth removed, before the disease will disappear. The tartar or other irritants at the necks, which caused the initial lesion, may have been removed and thus unobserved. The tissues, however, may still be suppurative. It must be remembered that there can be no lesion without a cause, and no infection without a lesion. Tartar is one of the greatest causes of these lesions and pus germs almost the universal infection.

The most frequent result of this suppurative infection, in addition to highly inflamed gums, is destruction of considerable zones of bone. This is especially true in the septa between the teeth and in the cancellous bone deeper in the alveolar process and the maxillæ. This condition is often comparable to osteomyelitis or tuberculous bone. It results in the death and destruction of much bone about and beyond the sockets of the teeth, and is known as necrotic alveolitis.

NECROTIC ALVEOLITIS

When the cancellous bone about or beyond the roots is reached any germs capable of living in such environment not only find Nature less capable of resisting their progress, but they find greater protection and more favorable conditions for rapid multiplication; consequently, considerable zones of bone die. This necrotic bone now becomes an additional object of care to the elements of protection and repair. Because the deposits still adhere to the roots, or because microbes are too plentiful to be entirely destroyed, Nature cannot accomplish the object of repair without assistance. She never ceases her efforts, however, until she disposes of the tooth, irritants and all. Then the army of repair soon heals the wounds. In this stage of the disease, calculus is often found about the apices, especially of the upper molars. Under these conditions the antrum is frequently penetrated, which often means empyema of this cavity. This penetration of the antrum is most apt to be between the first and second molars, but it is often between the second and third. The bone about all the teeth in the locality is more or less involved.

Deep-seated necrotic cases in the lower jaw sometimes result in the necessity of removing quite a portion of either the outer or inner plate of the jaw, and the loss of one or more teeth. In fact, the ravages of the disease may not stop short of the necessity of removing considerable portions of the jaw-bone.

In some instances, in both the lower and the upper jaw, quite large necrotic zones are found in the bone about, between or beyond the teeth. These cavities are often not associated with pus, but are of a "dry" necrotic or carious character; they are not usually accessible without drilling or curetting into them. The symptoms leading to their existence are usually pain of a neuralgic or tic douloureux character. The existence of these cavities is not commonly known, the pain usually being attributed to neuritis or possibly to tic douloureux. The treatment given in these instances is usually systemic for neuritis, instead of surgical for diseased periosteum and bone. Consequently the patient often suffers for many years without relief. Removal of the teeth involved usually gives entire relief in time. Healing may be induced, however, by curetting or burring out the diseased bone, sterilizing the cavities, and persisting in the treatment until recovery takes place. The tic douloureux features, which seem to involve the periosteum, would require a special paper to describe them; hence they will not now be discussed.

ACUTE AND CHRONIC ALVEOLITIS

The adjectives acute and chronic are applied to the various stages of alveolitis according as conditions demand, as is done in other surgical diseases.

MANUAL TREATMENT

While there is probably no disease of mankind so prevalent as alveolitis, there is likely no disease so amenable to treatment. This treatment is largely local and manual. Neither is there any disease more surely preventable. Prevention is a question of keeping the mouth clean and the teeth free from tartar and other irritants about their necks. This is a matter of mechanical cleaning, not medicinal. If the cause of the lesions is prevented, infection cannot enter and sterilizing medicines are not needed. Stomatologists and many dentists are now engaged in the successful treatment of alveolitis and in teaching their patients how to prevent it.

The whole of the operative treatment consists in removing all deposits or other irritants from the roots and necks of the teeth. This must be followed by sterilizing these surfaces, removing the dead and diseased bone in and about the sockets, sterilizing the sockets and cavities of bone, and keeping them thus sterilized until recovery is complete.

The preventive treatment is the patient's work. He needs instruction from the physician how to do it, however, since the ordinary way of "scrubbing the teeth" falls far short of reaching the object. In my hands it requires from three to six months for patients properly to learn the process of cleaning. It is the most important feature of the whole subject and the only practical method of prevention. Patients can and do learn it, however, and in consequence have mouths pure and free from disease, which is a large factor of insurance against many systemic maladies. Patients may have to return two or three times a year to have places cleaned which they cannot easily reach. But they can and do learn the preventive treatment.

The greatest shortcoming, in treating the disease, is the lack of thoroughness on the part of the stomatologist. He often fails to remove the deep-seated deposits near the apices of the roots and the dead bone beyond. To do this properly requires a touch trained to distinguish between deposit and the tooth surface, and between live and dead bone. It also requires skill and conscious effort coupled with a knowledge of the anatomy and pathology. Thus only can the work be properly done. This operative procedure must be followed by suitable methods of sterilizing the wounds. In but few cases is it practicable to remove all dead and diseased bone and all infection. If, however, a sufficient amount be removed, Nature will be able to throw a large enough army of repair about the wound to destroy the remaining bacteria and remove the dead bone. She then rebuilds the destroyed tissue as far as possible.

My own practice, in sterilizing these pockets, is to use pure tincture of iodin, 75 per cent. lactic acid or crystals of argyrol. Many other remedies may be equally good, but each physician must select his own, keeping in mind the object to be accomplished. A long curved hypodermic needle, and cotton wound on a "twist broach" have in my hands permitted the medication of any case yet presented. I have devised and had manufactured a set of curets and engine burs for removing dead and diseased bone. The burs are usually more efficient and less painful. The "plane-bit" type of the cleaners, however, is sufficient in most cases, being used also as curets.

PREVENTIVE TREATMENT

The dental profession of to-day is doing great good in promulgating and teaching the value of oral hygiene. After mouth examinations in schools, lectures and demonstrations are given to the children, teachers and mothers on the prevention of disease by mouth cleanliness. The results of this work show, not only improvement in general health, but also greatly increased mental capacity in the children.

The condition of the mouth, in both adults and children, should receive much more careful attention from surgeons and physicians than it ever has. This is especially needful, since oral sepsis is now known to be the source of many diseases. Numbers of these are surely preventable by mouth cleanliness. Insurance companies are beginning to recognize this fact.

The so-called prophylactic treatment, as practiced by the dentists of to-day, is really the surgical treatment of the disease, since it is the removal of the exciting and secondary causes.

In the initial and non-suppurative stages of alveolitis, simply removing the tartar—cleaning the teeth—enables the wounds to heal. This is all the treatment a large majority of cases receive at the hands of most dentists, and all they need. But it is most desirable to know the whole pathology and treatment of the extreme cases as well as the simple ones.

The disease tends strongly to return if preventive treatment is neglected by the patient. That which brought on the disease, namely, the lime salts in the saliva, is always present to bring it back. Tartar, when first deposited, is soft, like partly dissolved soap, and is easily removed. Inside of forty-eight hours the film next to the tooth begins to harden and is then removed with much difficulty. Hence comes the necessity of thoroughly cleaning the mouth and teeth at least once a day, with brush, powder, picks and floss.

RECOVERY

It should be borne in mind that, after the initial stage, alveolitis is a bone disease, and should be treated as such. It takes the bone and periosteum of the jaws as long to repair as it does like tissues elsewhere; the cementum requires a longer time for repair than does bone.

In the deep-seated cases the difficulties of removing all calculus and infection are such that a number of sittings, a week or two apart, may be necessary to remove them. Healing begins immediately after the first treatment. The usual time required for regeneration of the bone and periosteum, however, must be allowed before we can expect recovery. Therefore great patience is necessary on the part of both patient and physician. Three months is the shortest time in which one could reasonably expect good results. A period of six months, a year or more often elapses before recovery is satisfactory. During this time the patient will need the physician's assistance once a week, or two or more weeks apart, according to symptoms.

SYSTEMIC FEATURES

Alveolitis, like all other diseases, has its nervous phase. This results in discomfort, pain, or total disability, according to the complications and intensity of the disease.

Alveolitis is encouraged by auto-intoxications and by the numerous manifestations accompanying them, such as gout, uric acid disorders, arteriosclerosis, etc. These diseases are in turn encouraged by alveolitis; thus, the vicious circle is established. I know of no systemic pathologic conditions, however, which could cause the almost universal presence of alveolitis, but local irritants are universally present.

We all know that alveolitis recovers without systemic treatment, but such treatment often materially assists in recovery. During systemic disorders, any weakened organ or point of least resistance, such as "sore gums," becomes easily inflamed and acute. That particular local feature is thus intensified. If, therefore, systemic disorders are manifest and serious, they should have attention at the hands of the operator or the family physician. On the other hand, I believe that alveolitis not only is of local origin but also, in its suppurative and necrotic stages, is a great predisposing factor to, and is the cause of, many bodily diseases, such as pernicious anemia, disorders of the alimentary tract, nervous derangement, etc., etc. The mouth as a source of septic poisoning and the cause of many diseases has recently attracted the attention of acute diagnosticians.

Dr. William Hunter, of London, has put the dangers of oral sepsis plainly before us. I strongly recommend his papers to any one who is interested in the subject. In closing, I wish to quote some paragraphs from him which will help to establish the idea that alveolitis is of local origin, and that it is the cause of many bodily diseases, instead of its being the result of such diseases.[1]

In the foregoing sketch of the chief sphere of the doctor's work and interest, I omitted any reference to one other portion of the body which constantly comes under the observation, indeed, more often than any other—I mean the mouth. This omission was intentional on my part. The cases presently to be described—which could be multiplied by thousands and tens of thousands coming under the daily notice of doctors—illustrate how constant the omission is in practice. . . .

What I desire to impress on you students, and all students entering the profession, and all those already engaged in the practice of the profession is, it is "not a matter of teeth and dentistry." It is an all-important matter of sepsis and antisepsis that concerns every branch of the medical profession, and concerns very closely the public health of the community. It is not simply a matter of "neglect of the teeth" by the patient, as is so commonly stated, but one of neglect of a great infection by the profession—a great infective disease for which the patient is not primarily responsible any more than he is responsible for the contraction of typhoid fever or tuberculosis. The condition referred to is that to which I have given the name of "oral sepsis." . . .

The chief feature of this particular oral sepsis is that the whole of it is swallowed or absorbed into the lymphatics and blood. Unlike the sepsis of open wounds on the outside of the body, none of it is got rid of by free discharge on the surface. The effects of it, therefore, fall, in the first place, on the whole of the alimentary tract from the tonsils downward. These effects include every degree and variety of tonsillitis and pharyngitis, of gastric trouble, from functional dyspepsia to gastritis and gastric ulcer, and every degree and variety of enteritis and colitis and troubles in adjacent parts, e. g., appendicitis. The effects fall, in the second place, on the glands (adenitis), on the blood (septic anemia, puerpural fever, septicemia), on the joints (arthritis), on the kidneys (nephritis), and on the nervous system. . . .

The title "oral sepsis" was first introduced into medical literature in a paper entitled "Oral Sepsis as a Cause of Disease." My object in seeking for a special name, and, after consideration, in creating this one, was to emphasize the great fact that it is not the absence of teeth, but the presence of sepsis, that it is not dental effects, but septic effects, that it is not defective mastication, but the affective sepsis associated with such dental defects often present, in conditions of gingivitis apart from such dental defects, that are responsible for the ill health associated with "bad" mouths. . . .

The subject of oral sepsis, as I designated and defined it, namely, the septic lesions of streptococcal and staphylococcal infection found in the mouth, belongs to no one department of medicine or surgery. It is common ground on which the general physician or surgeon, the throat, nose and ear and eye specialist, specialists in children's diseases, in stomach diseases, in blood diseases, in "rheumatic" diseases, in fevers, in skin disease, in nervous and mental disease, and lastly the dental surgeon, all meet on terms of equal responsibility. In its earliest manifestations, no special knowledge is required to deal with it; a sound grasp of the principles underlying antisepsis alone is required. Unfortunately for the patient, it is precisely this grasp which I grieve to say is wanting. . . .

For this is what the practitioners are constantly doing. Wherein consists the pathologic difference between a follicular tonsillitis and a foul, septic, suppurating condition of the gums, with deposition of calcareous "crusts and scabs" (so-called tartar) covering and hiding septic wounds and ulcers, loaded, as microscopic examination shows, with staphylococci and streptococci? None whatever, except that the latter is exceedingly common and the tonsillitis is comparatively rare. The pathologic condition in both is the same, namely, sepsis. Moreover, it is sepsis as easily recognized and much of it as easily removed in the case of the one as in the other.

Even if the teeth are not subject to a very marked septic infective process, the infective processes in the gums constitute very important septic wounds, and are a great source of sepsis to the body. As a matter of experience this is often the case. The teeth remain intact, or at least free from obvious caries or carionecrosis, but the gums and the periosteum of the sockets are the seat of numerous septic wounds. These are shown by septic suppuration, by deposits of tartar sometimes in great masses on the teeth, on the gum-margin and beneath the gum-margins, by the formation of pockets (septic ulceration of the periosteum—periostitis), absorption of bone, and loosening of the teeth in their sockets. . . .

I submit, then, once more, as I did in the first communication (1900) bearing the title of "Oral Sepsis," that in the interests of the many sufferers from the great group of medical affections which it produces, this condition of oral sepsis, the chief channel of access of all pyogenic affections, is urgently deserving of increased notice and attention. Knowing, as we do, the pathogenic qualities of staphylococci and streptococci, we have not the slightest excuse for allowing the mouth, so easily accessible to local measures, to remain their chief seat, and its open wounds a veritable hotbed for their development and propagation.

11 East Seventh Street.

1. Hunter, W.: Rôle of Sepsis and of Antisepsis in Medicine, an address delivered at the opening session of the Faculty of McGill University, Montreal, Oct. 3, 1910.

WANTED: A SENSE OF ASEPSIS*

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Have we, as practitioners of an important specialty of the healing art, a proper sense of asepsis? If a just opinion can be formed from observing the clinical teaching in our dental colleges, the methods employed in the offices of nearly all classes of dental practitioners and the demonstrations at the clinics of our state and national societies, then we must admit that we fall far short of a proper sense of asepsis.

What is asepsis? Asepsis from the surgical standpoint is that condition, maintained during the operation or treatment and the after process of healing or cure, which is the result of any process or method rendering the tissues to be operated on, the hands of the operators, the instruments, dressings, fluids, medicaments and ligatures, which come in contact with them, *germ-free,* and maintaining this condition during the operation or treatment and the after-process of healing or cure.

It would be manifestly unjust to say that dental practitioners as a class are ignorant of the principles that underlie asepsis. That these principles are taught in the lecture-rooms of most of our dental colleges there is no doubt; but this teaching is then practically ignored by a very large majority of the students in their clinical work in the infirmaries. This is due in part to the fact that the clinic-rooms are poorly equipped with sterilizing apparatus and that the teachers, demonstrators and professors who oversee and direct the operations of the students are often exceedingly lax in their own technic and do not insist on a faithful carrying out of the didactic teaching on this subject. I have been astonished, yes, appalled, at the utter disregard of all modern, scientific methods of asepsis to be found in many of our dental colleges, in the offices of numerous dental

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practitioners and particularly at the clinics of our state and national societies.

Let me particularize as to some of the things that I have seen in the infirmaries of our dental colleges:

1. In one college there were only two sterilizers in the operating-room and one in the extracting-room for the use of more than fifty students. It needs no extensive calculation to prove that this provision for sterilization was entirely inadequate, and as a result the majority of the students contented themselves with simply wiping their instruments on a towel, often a soiled one, before passing to the next patient, rather than wait for their turn at the sterilizers. Furthermore, I have seen nerve broaches that had been used in septic pulp-canals tossed back into the box without sterilization and used again on a patient without even being dipped in phenol (carbolic acid) or other sterilizing fluid. One towel was made to do duty for an entire clinical period lasting from two to three hours and sometimes for two to three patients. Demonstrators frequently passed from one patient to another, examining and criticizing the work of the students, but never thinking it necessary to even wash their hands before placing their fingers in the mouth of the next patient. But worst of all, I have seen a prominent teacher pass through his operating-room with a mouth-mirror in a waistcoat pocket, examining the work of his students and going from chair to chair without once washing his hands or cleansing the mouth-mirror. Verily we do need "a sense of asepsis" and in this case something more.

2. I have visited the offices of many dental practitioners in which there was no provision for sterilizing instruments, and the only cleansing that I saw these instruments receive was a simple washing in warm water. I have been invited to examine a case, and after carefully washing my hands and sterilizing them with alcohol, have been offered a soiled towel to dry them with.

An office may be fitted up in the most elaborate manner with enameled furniture, marble floors and wainscoting and zinc painted walls, but this will prove of no value if the more important matters of local and personal asepsis are neglected or ignored. The charge, often made by physicians, and doubtless true, that infectious diseases such as tonsillitis, diphtheria, tuberculosis and syphilis have been frequently transmitted from one patient to another by unclean and septic dental instruments is a shame and a reproach to modern dentistry, and shows the need of a "proper sense of asepsis."

3. I have witnessed at the public clinics given by various state societies and at the clinics of the National Dental Association the same disregard of aseptic methods as those already mentioned. In fact, the one thing most prominently and indelibly impressed on my mind at the last meeting of the National Association was the reckless disregard of asepsis in many of the clinics, both by the operator himself and those that he permitted to inspect the progressive steps of his operation and its completion. Twice in my professional life I have been a patient at the clinics of the National Dental Association, and I therefore speak with authority and much feeling when I say that I looked with fear and trembling at the dirty fingers thrust into my mouth by the interested spectators. But never more. Personally I have always declined to operate at one of these public clinics for the reason that the facilities for aseptic operations were so meager or absolutely wanting that I dared not risk the health or life of the patient, or my own reputation.

In my work as an examiner of dental surgeons for appointment to the dental corps of the U. S. Army, I have found a lamentable lack of a proper sense of asepsis, and many young men have failed in their practical tests by reason of this fact.

I have always considered it my duty to draw the line very sharply on the question of a proper sense of asepsis, for the reason that great harm may result from uncleanly methods of operating. The remedy for such methods lies with the teachers in our dental schools and with the clinicians at our state and national associations. When teachers of prominence and clinicians of high standing in the profession are indifferent to, or ignorant of, the principles of asepsis, it cannot be expected that the students and young practitioners will be impressed with its value or see the necessity for such painstaking and elaborate preparations to prevent infection. The fact that infection does not always take place when aseptic methods are ignored is no assurance that it will not take place in any case. Resistance to disease is not equal in all individuals, and the virulence of infective organisms is not always the same. Untold suffering and many deaths have been the result of neglect and ignorance of a proper sense of asepsis.

Much of the trouble experienced by so many dentists in the treatment of septic conditions of the teeth and mouth is the result of an imperfect knowledge of the principles of asepsis and a worse than bad technic.

I know of a physician who left the chair of a dentist of high reputation because of his fear of infection on observing the unscientific technic practiced by the dentist. The public generally is also becoming educated along these lines, and many individuals will not expose themselves to such grave dangers from infection at the hands of a careless or ignorant dentist or surgeon.

Is it not time that this question of asepsis in all dental operations should be taken up in a serious manner and that its principles be taught and the technic practiced in the most careful and scientific manner?

There is no longer any excuse for lax methods in asepsis, and the sooner the profession awakes to the fact, the better it will be for the reputation of the profession and the health of the public. *Wanted: a sense of asepsis.*

2519½ Durant Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. FLETCHER AND MARSHALL

Dr. Vida A. Latham, Chicago: These papers show again that we need our laboratories; that we need wise teachers; and also that we must be weak somewhere that it takes twelve or fifteen years before the medical profession, including dentistry, to discover Hunter's work on oral sepsis. The paper read by Dr. Hunter has been lying dormant until some factor brought it out. Was it the attack on American dentistry in regard to bad bridge-work which caused such a furor, or was it the fact that Americans did not like the idea that that came from this side? This paper that has been quoted from was a paper on diseases of the blood, inspired by a paper which Byron Bromwell wrote on anemia, in which he said that there was a peculiar condition of the blood in anemia that nobody seemed to grasp. Dr. Brown presented that subject to us and gave a number of lantern slides, and the question was put to us, what was it that caused this peculiar condition of the blood? That means that it comes very near our field of work, and is very far-reaching in its effects; that it is not only in the mouth, but in the abdominal viscera, the liver, the spleen, kidney, etc., proving that sepsis from streptococcus infection was all through every organ. Dr. Hunter wrote as far back as 1900 on acute kidney sepsis due to streptococcus infection. If you remember I made mention of this at the Portland meet-

ing, and the suggestions made by this Section were put into effect in the Indian jails and the percentage of dysentery was lessened more than 50 per cent. by oral hygiene. It would look to me as though we need postgraduate work in this line, as only a few of the journals have made any mention of this subject, and that only in three or four which are simply rehashes of what we already know.

DR. A. J. FLANAGAN, Springfield, Mass.: Of course, some here present know that in the minds of fully 90 per cent. of the people in America, who are having dentistry done to-day, the great thought as they enter the dental office is this, that they are paying for a material, and that the fee that is to be collected is usually computed on account of something material which they have received. In medicine and surgery that does not enter into consideration. People think to-day, when they go to physician or surgeon, that they are to pay for the knowledge and the ability of the operator, and the dangerous condition of the operation, and many other things which we have not the time to mention. Now, if 90 per cent. of the people can be educated to understand that dentistry is a part of the healing art, the great problem of sepsis in the average dental practice will have been solved. It is an economic question because of the condition that exists in the minds of the people. Now, what are we to do about it? I would like to ask Dr. Fletcher, or any man here, if the tooth which has lost two-thirds of its hold in the jaw is the equal of one which has its three-thirds. In proportion as we lose a proportion of that hold in the jaw, in that proportion do we lose a certain usefulness of that tooth. If we take into consideration the stress and the fact that there is going to be decay of the tooth, and the liability of the tooth to disease and all that, we need to recognize the fact that the tooth can never be retained in the mouth without some method of increasing or bringing back the hold which has been lost. Has any man ever been able to recreate pericemental tissue? Many young men are led astray by the idea that we can recreate that two-thirds or half of the attachment of the pericemental tissue.

DR. M. L. RHEIN, New York: The hygienic preservation of the mouth with the septic foci left in the mouth is of course to us an absurdity, and yet a careful investigation of what 90 per cent. of the dentists of this country consider this sort of treatment will show just such a condition of affairs. I am a very earnest advocate of mouth cleanliness among the poorest classes of children. I believe that if dental dispensary service to poor children were confined to this one feature much more benefit would ultimately accrue than by the use of questionable methods of dental repair and construction. I have seen much harm perpetrated and damage done to the human body by makeshift or cheap constructive dental service; nothing has tended more to produce unhygienic conditions. Operative dentistry in its true sense is more or less of a luxury; it is impossible to make it a necessity. We can teach oral hygiene in its real and true sense; but when it comes to the repair of the ravages of dental disease, anything that falls short of what should be done should be criticized as malpractice. It is not a benefit; it is a curse. That is the true picture of dentistry as performed by the mass of dentists for the people who cannot afford to pay for dentistry properly performed. The excuse that these dentists give for that kind of malpractice is that it is impossible for them to provide the proper kind of dentistry and earn a livelihood. My point has always been in this matter that the people who cannot afford to pay for the preservation of the tooth so that it shall be preserved in an aseptic condition from further possible infection hereafter, would be far better off if they never had anything done to that individual tooth. It remains for a Section like this to establish some form of education that will bring the practice of stomatology out of such a condition. The one way is to make the general medical man understand what aseptic dentistry means and to be able to distinguish the difference between aseptic dentistry and septic dentistry. When the physician understands that that dentistry is taking away years of the life of that patient by the septic methods of work pursued, he is going to protest against that thing just the same as he would protest against some form of maltreatment of the patient's ears or eyes, or any other part of the body.

DR. E. S. TALBOT, Chicago: The first part of Dr. Fletcher's paper is rather labored. Dividing up the different degrees of the disease does not appeal to me as being a point well taken. If we understood more clearly the nature of the structures under discussion we would be better able to grasp the pathology and be much more clear I think in the aggregate. If we understood that the alveolar process is a transitory structure; that it is simply there for the purpose of holding the teeth in place, and when disease attacks the alveolar process, or a tooth is extracted, it is natural for that process to be destroyed, then we would more readily understand the nature of the disease that attacks the gum margin. Again, the alveolar process is an end-organ, and end-organs are more easily involved in disease than any other structure of the human body. So that having an exceedingly sensitive structure, a double transitory structure and an end-organ, when disease once attacks the gum margins it becomes chronic and the tissue is very rarely restored to health. In lower vertebrates we have continuous sets of teeth; they come and go throughout the life of the individual, and as we ascend in the scale up to man, and some of the lower vertebrates, we have only two sets of teeth, and all of the vertebrates that have only two sets of teeth have what I call interstitial gingivitis. Animals in captivity, cows and horses, if fed on food that is not natural, or animals put in cages and forced to live unnatural lives, have this disease, because the teeth are only intended for a short period of time. The first teeth come into place and are lost, the second come into place to remain only a short time. As soon as man or animal get their growth, the alveolar process begins to absorb away to shed the teeth. It is an ataviam, and so this inflammation is not easy to treat. If the individual has any disease, if his system is out of order, if his blood is in poor condition, and he has a local irritation about the teeth, that irritation affects these transitory structures and end-organs, and as the result sooner or later they lose their function and the teeth drop out. In 1886 I read a paper, (I think in the *Cosmos*), making the statement that dentistry was producing more disease of the gums than any other one thing, and I have worked on that line for forty years. The principle of saving teeth is wrong. Every time we put the rubber dam or a clamp on a tooth, or wedge the teeth apart for the purpose of filling, or injure the gum margin with an instrument, we set up an irritation that eventually, whenever the system is out of order, that is to say, when the blood is not perfectly pure, will affect the alveolar process. If we cannot treat a tooth and save it without irritating the alveolar process and the gum margin, it is much better to remove that tooth; it is a quicker way of getting rid of it and the patient would have a healthier mouth, then he could possibly have under our present methods of operation.

DR. W. C. FISHER, New York: The appurtenances provided at most dental meetings for giving clinics certainly are deplorable, and everything that Dr. Marshall has said is true in more than nine out of ten state and national meetings. I agree most decidedly with Dr. Talbot that many of these cases are extremely difficult to treat. I frequently have skiagraphs taken of the patient almost immediately on presentation for treatment in order to learn if there is anything to prevent a cure, and if I am convinced that there is, I do not hesitate to remove the tooth. In referring to the character of bridge-work, and the unclean mouths that result from the character of work done by 90 per cent. of dentists to-day, I do not blame the dentist, but I blame the patient for going to the man who is doing the kind of dentistry that is done to-day in the dental school and in the public clinic. I am not inclined to think that 90 per cent. of American dentists have been so careless as they have been pictured. There are more than 10 per cent., I believe, who do good work and do not do patients harm.

DR. M. I. SCHAMBERG, New York: I would like to emphasize further the point brought out by Dr. Talbot in connection with the fact that the gingival border of the gum tissue might be properly styled an end-organ, and that that portion is more susceptible to disease during conditions of poor peripheral circulation than other parts. We might take as an analogy, the

drying up of a leaf, the manner in which it dries up on the edge as a rule more particularly than in the center and the manner in which the majority of fruit rots or decays at the point of a bruise. There is a tremendous amount of harm done through the bruising of the margin of the gum, whether it is done by improper brushing of the teeth, poor dental work, or the impaction of food in the interdental spaces. These are the exciting causes of pyorrhea. Dr. Flanagan's question, "Is there a man who can restore lost tissue?" must necessarily be answered in the negative. I have had several very severe cases during the past winter in which there appeared to be a gum flap lying over the tooth, with no tendency toward attachment at any point. I snipped that off with scissors, in some cases exposing the tooth almost down to the apex. It is astonishing in many of these cases the amount of firmness that is regained after the source of irritation and accumulation of filth has been removed. I believe that the tooth even though it be exposed for one-third the length of the root might be retained, as many temporary teeth are at times retained, and remain very firm with practically no root remaining, as is frequently noticed.

DR. H. S. HASLETT, Pittsburgh: The statement was made a moment ago that the fault of poor dentistry lies with the teaching in the colleges. The fault lies more with the following out of the teaching after the student gets into practice himself. We find in many instances that young men going into practice will neglect the most intricate part of their work, will forget technic, and take short cuts across lots in order to reach a conclusion rather than to go by the beaten path through which they were led during their college course. Not more than three weeks ago a young man who had been in practice for three years, brought a piece of bridge-work to me and asked me to criticise it, and he walked out of the office because I said he was never taught to make a bridge such as that, and that as soon as he could forget this kind of work, just so soon would he begin to progress in the profession and not until then. That was the case of a young man who had been in practice a short time. Last week a student just finishing his freshmen course came to me to ask if he had failed. I told him that he had; and he said, "I believe that dentistry is a big graft game, and I am sorry that I cannot go on." "If that is the way you feel," I said, "now is the best time to get out; we do not want you, if you feel that dentistry is a graft." What would you expect of that man if he went on? How would he prepare cavities, how would he fill teeth, how would he treat any conditions that he came in contact with, with that idea of graft before him? Now, we do not teach graft; we teach dentistry, and if they become grafters after that, it is not the fault of the college, but the fault of the student.

DR. M. H. FLETCHER, Cincinnati: In answer to Dr. Flanagan, I do not think that the physiologic repair of tissues can be measured by halves or quarters. One tissue may repair more than another, and I believe with Dr. Fisher, that when there is nothing left that will bring about repair, that teeth should be removed for the purpose of asepsis. Nevertheless, after careful study of the conditions, if I can distinguish any healthy tissue left in the socket of the tooth, it is worth an effort to try and save that tooth. I have seen many cases in which teeth have become useful regardless of stress. I can show any number of radiographs taken one, two or three years after the case had been in hand in which there has been repair. An artificial substitute of itself would be more or less a continual cause for sepsis. How many people who have removable pieces in their mouths keep them as clean as they should be? Now, it is up to us to know enough about the laws of physiology of repair and about pathology to be able to distinguish these conditions when we see them. If the doctor's degree does not give that knowledge what is the degree for? I object to Dr. Talbot's use of the term "end-organ." His condemnation of the alveolar process, saying that it is transitory, does not mean to me what it does to him, for in an animal which has progressively growing teeth, the alveolar process is continually reforming as long as that animal has that tooth, and as long as it lives. Why does that animal not have this disease around the teeth? Look at the ruminants, there is a hard tissue developed around their teeth, which when wounded heals as the skin would heal. It heals because of the physiologic principle for the organism to repair itself. That is the law of repair and growth, and it cannot be changed no matter what we think or try to do. It is my endeavor to teach every patient and I tell them that they cannot be my patients if they do not want to learn this. What I undertake to do is to replace with the tooth-brush in the hands of the patient everything that creates healthy gums and healthy connective tissue around the necks of the teeth. I do not see any difference between the method of repair of the tissues around the alveolar process and that in any other part of the body. The cementum will repair itself to a certain degree. They have originally the same process of forming bone. As far as the transitory conditions are concerned I do not see any difference excepting in environment which brings about the necessity for the animal to shed the teeth. Take the pachyderms, the elephants; elephant's teeth are continually shedding—until the time of death, as far as I know—and the physiologic process of building bone around each tooth is a natural histologic process in consequence of the demand of the animal for the teeth. The alveolar process is found in all ruminants, and the process is perfectly normal as far as I see.

DISEASES OF THE FALLOPIAN TUBES *

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The belief that all diseases or pathologic conditions of the fallopian tubes cause symptoms is fallacious. Pathologic changes in the tubes may be present for some time without giving rise to disturbing symptoms. It is important, therefore, to examine carefully, for the possible existence of pathologic conditions of the fallopian tubes, all women who consult us about diseases of the generative organs. This is particularly exemplified, for instance, in cases of catarrhal and interstitial salpingitis caused by gonorrheal infection, in which the tubal inflammation causes no marked symptoms and the physician is consulted only as to the cause of sterility. Should the physician, in such a case, make use of intra-uterine treatment, without realizing what the true condition is, a pelveoperitonitis is liable to result.

It is likewise fallacious to suppose, as many do, that women whose fallopian tubes are the seat of gonorrheal infection, particularly so if it be suppurative, are permanently sterile therefrom. So long as the inflammatory process has not caused an occlusion in a part of the tubal lumen, a cure of the inflammation is possible, and subsequent conception as well — this latter, however, only if the husband be entirely cured and if a restoration of the tubal mucosa to its normal condition take place. But, knowing of such possibility, we must be guarded, not only in our prognosis, but also in our therapeutic measures. We should not, in such cases, advise a surgical intervention which would prevent the possibility of a future impregnation, unless, after carefully weighing the subjective and objective symptoms, an intervention of such serious nature seems imperative.

We may lay at the door of gonorrheal salpingitis the cause of most tubal pregnancies. Any tubal inflammation which destroys the tubal epithelium to such an extent that the fertilized ovum is not conveyed to the uterine cavity will cause that mishap.

If we find the fallopian tubes objectively in a pathologic condition, and the patient complaining of dys-

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menorrhea, of which she did not formerly complain, we may attribute that symptom to the inflamed adnexa. Inflammation of the adnexa, however, need not necessarily cause dysmenorrhea. It should be borne in mind, though, that from the character of the dysmenorrhea, the cause of it cannot be diagnosed with certainty.

Likewise, tubal inflammation may cause a change in the type of menstruation. The most common change in the type is menorrhagia, caused, however, not so much by the change in the tubes, as by the accompanying change in the ovaries, giving rise to an alteration in ovulation, which produces chronic hyperemia of the uterus. This explains not finding a thickened endometrium when one curets such patients for the relief of uterine bleeding. Sometimes, however, amenorrhea may be the result of salpingitis. If the tubal disease does not cause pathologic changes in the ovaries, the menstrual type is not likely to be changed.

Pain, too, need not be a constant or necessary symptom of tubal inflammation, but if it be present, it is not a characteristic pain of any particular variety of tubal disease. In most instances, pain is caused by localized peritonitis. If the tubal sacs are exceptionally large, as occasionally occurs in pyo- and hydrosalpinges, pain may be caused by pressure of the sacfosalpinx. Furthermore, adhesions of the tubes to the intestines may be a cause of pain whenever peristalsis of marked degree is present. It is likely that, in some instances, colicky pain, which sometimes occurs, may be explained by contractions of the tube-wall. Exacerbations of pain and of local peritonitis are apt to occur in some forms of tubal inflammation, particularly those caused by gonorrheal infection.

The cause of the exacerbation can usually be elicited, if one is careful in taking the history. About the time of the menstrual period exacerbations are more likely to occur should the patient expose herself to wet, to cold, to sexual excess, to undue physical exertion, and so forth. Sometimes such exacerbation may be accompanied by symptoms of such severity that an operation at that time may appear imperative. Such is, however, seldom the case. With proper treatment the patients usually recover within two weeks; generally after the lapse of a week they are able to be about again. Exacerbations are indeed practically the only pathognomonic sign of tubal inflammation, particularly of those of gonorrheal origin. This may be ascribed to the microorganisms in the tubal secretions in such cases. But that even very gross pathologic tubal lesions, of gonorrheal origin, too, may exist without causing marked symptoms, was again well illustrated to me a few days ago, in the case of a patient who had had symptoms for a number of years, and who had been advised to have herself operated on by every gynecologist whom she had consulted. For nearly a year she had been free from pain, and her only reason for now seeking advice was to know why she had not menstruated during the previous four months. The pelvis was filled with two large tubo-ovarian abscesses that had been diagnosed hitherto by others; the history of repeated attacks of gonorrhea was distinct, as was also the recurrence of repeated attacks of pelveoperitonitis formerly; yet now only amenorrhea was present as a symptom, accompanied by moderate leukorrhea. It is very seldom, I admit, that we have absence of symptoms in the interstitial forms of salpingitis, particularly if, as is not infrequent, the infection has been transmitted to the pelvic connective tissue, which may then cause more or less distortion of other structures within the pelvis.

Backache is a prominent symptom, usually accompanied by pain in the lower abdomen, most intense on the side corresponding to the tube most markedly affected.

It occasionally happens that a distended tube partly empties its contents into the uterus, if the uterine end is patent and if its position is not too low in the pelvis. Or the tube may become intimately adherent to the bladder or to the rectum, and a rupture may occur into either, and thus a part of the contents may be evacuated. I have never seen an instance of rupture externally, although this, too, has been reported by reliable observers. I recall one instance of spontaneous cure, but only one, from spontaneous rupture of the tube into the rectum.

Among other symptoms of salpingitis, neurasthenia is not a rare occurrence, brought about primarily by the undermined general health of the patient; and, perhaps, also by the dislike for sexual intercourse which often acts detrimentally on the general condition of such patients.

It may chance that a rupture of a distended fallopian tube takes place intraperitoneally. The symptoms resulting therefrom necessarily differ, according to the virulence of the tubal contents. The accident, if the contents be purulent, must always be considered as very serious — so serious that the abdomen should be opened and the necessary surgical work be done as soon as possible.

I believe that I was among the first, if not the first, to describe spontaneous rupture of pyosalpinges, and at the time I narrated the history of the cases seen by me. Since then a number of others have published similar experiences.

When one finds the symptoms of sudden collapse, with the knowledge that a pyosalpinx was probably previously present, then there is reason for an immediate surgical intervention, particularly should peritoneal symptoms be already present. The temperature may in these cases become quite high, especially if the rupture date back a day or more and the patient be nearing a fatal termination.

The exacerbations of gonorrheal pyosalpinges that are not infrequently found during the puerperium, associated with peritonitis, are so frequently mistaken for a true septic infection, for which the accoucheur is held responsible, that it is important to call attention to this condition. The symptoms are sometimes so grave that the patient's life may be endangered, but in the greater number of instances they subside after a few days, so that sometimes a *restitutio ad integrum* may take place.

DIAGNOSIS

From the foregoing it is obvious that, to establish a diagnosis of salpingitis, the fallopian tubes must be palpated. This can be done only by bimanual examination, and at times it will be necessary to resort to rectovagino-abdominal palpation under an anesthetic, and even to steady the uterus, and make traction on it with a tenaculum forceps, while palpating. Normal fallopian tubes, or those which are the seat of mild catarrhal inflammation, cannot readily be felt, if at all, unless the conditions for examination are favorable.

To make an accurate diagnosis it is necessary to distinguish the ovary from the tube, which one can do by appreciating the difference in consistency of the struc-

ture, when the two are closely attached to each other. But in addition to the palpatory findings, a history, taken carefully, is of the utmost value in coming to a conclusion, when a diagnosis is to be made.

The position of a fallopian tube which is the seat of inflammation, particularly of purulent inflammation, may be in various abnormal sites of the pelvis. For instance: I have seen the tube of one side elongated and distorted so that it was adherent to the tube of the opposite side. And, again, I have seen such tubo-ovarian abscess adherent to the fundus of the uterus, so that a uterine tumor was simulated.

In instances of tubal disease, in addition to securing a carefully elicited history and the objective pelvic findings, one should inspect the vulva, particularly about the urethra, and should carefully examine the small urethral ducts for evidence of the presence of chronic gonorrhea. Likewise the cervical secretion should be examined with the same object in view.

To make a diagnosis of tuberculous salpingitis, it is necessary to have other evidence of a like tuberculous condition than the mere presence of thickened tubes. If a tuberculous salpingitis has been present for some time, it is probable that other changes are discoverable which will aid one in making a correct diagnosis; the most positive of these is the finding of tuberculosis elsewhere, particularly if another infection can, with certainty, be excluded.

I do not believe it possible to make a positive diagnosis of tuberculous salpingitis in the early stages of the disease, when it is still limited to the deposit of small tubercles on the serosa of the tubes and when there is only a moderate thickening of the tubes. At least I, in such cases, have failed to make the diagnosis. I could, in three of these instances, only determine that there was an indurated condition of the tubes near to the uterus, resembling the salpingitis nodosa, first described by Schauta. The other part of the tubes, toward the abdominal end, seemed somewhat thickened.

To diagnose by palpation alone, whether a tube is distended by pus, serum or blood is not easy. I thought, some years ago, that I could distinguish by bimanual examination alone the difference between a hydrosalpinx and a pyosalpinx, but a few errors in succession taught me how erroneous was my belief. Even the examination of the blood, when the pus is confined to the interior of the tube, and the process is chronic, is not likely to aid us, because in such cases we are not likely to find leukocytosis.

The most reliable feature on which to make a diagnosis of pyosalpinx is the doughy sensation that a pyosalpinx imparts to the examining finger, rather than the elastic sensation that a hydrosalpinx gives. Furthermore, in patients with pyosalpinx, we are likely to have, at times, slight elevations of temperature, perhaps of one-half to one degree, particularly after a bimanual examination. This is not the case in hydrosalpinx patients. In addition to the two principal features mentioned, I may add that purulent tubes are more likely to be adherent than hydrosalpinges.

Hematosalpinx, not due to tubal gestation or to atresia of the genital tract, cannot, with even a moderate degree of certainty, be diagnosed, except by puncture with an exploratory needle, a method not necessary or desirable in such cases. A tubal gestation, if uninterrupted, may be best determined by recognition of the changes of pregnancy in the structures of the vulva, vagina, uterus and the underlying connective tissue; and in case of no previous pregnancy, the breast-changes are important. But still, despite all carefulness, one may sometimes be in a quandary as to the diagnosis, as the two following examples, cases recently seen, so well illustrate:

Case 1.—A. F. was referred to me by Dr. Max Einhorn. The patient has been married two and a half years, but has never been pregnant. Menstruation is regular, at intervals of four weeks. For four weeks there has been atypical bleeding, which, during the last week, has been accompanied by intermittent cramp-like pain, lasting about five minutes; then, after a few hours of freedom from pain, recurrence of a similar attack. The uterus, on examination, was found to be sharply retroflexed, a trifle relaxed in consistency and seemingly a little larger. The right tube was prolapsed but seemingly normal; the left tube I failed to palpate. No pain was felt on moving the vaginal part of the cervix. There were no breast symptoms. Immediately after examination the patient fainted; her pulse became absent at the wrist. As soon as she rallied from the collapse, she complained of very severe pain in the lower abdomen. The whole picture, although there were no objective symptoms further than the relaxed uterus, pointed so strongly to a ruptured tubal gestation that, as soon as the patient had sufficiently rallied and a cessation of the pain had been brought about by scopolamin and morphin, I sent her to the hospital with a view to operating on her for that condition, should a more definite objective symptom present itself, and also because of the uterine displacement. By the following morning she was again in good condition, the bleeding excepted. Most careful examination under anesthesia failed to show on palpation any evidence of an hematocele. Indeed, I failed even now to palpate the left tube. Such complete absence of objective symptoms was there that I did not consider it necessary to make the trivial culdesac puncture, but proceeded to curet, which procedure was practically negative, as was also substantiated by an examination of the scrapings in the laboratory.

The bleeding continued as before, likewise the intermittent pain, so that I felt conscience-stricken for not having entered the peritoneum; but then another bimanual examination, two days later, again failing to show objective signs, particularly no hematocele, and no tenderness on moving the portio vaginalis—a sign, very reliable, if taken in connection with other objective symptoms, as already frequently stated by me—I determined to let the patient alone. I do not believe it proper—rare instances excepted—to open a woman's abdomen merely on suspicion.

Case 2.—The second patient, seen on the same day, said that she had been curetted nearly four weeks previously by her family physician, with the object of destroying the conception product, of which she believed herself possessed. She has had atypical bleeding since, and also pain now and then, in the lower abdomen. The pain was described as a "heavy pain" at no time cramp-like. The pelvic examination was negative; but in view of the symptoms I was suspicious, believing that probably a curetting had been done in the presence of a tubal gestation. Five days later the palpatory findings verified this suspicion. On the following morning the diagnosis was verified by operation. The tube ruptured during operation.

In instances in which a tubal gestation has begun to be interrupted — in which the conception product is dead—the diagnosis is not likely to be difficult, unless the symptoms are atypical. The history in such cases is of great importance. In cases of doubt, certainty as to the presence or absence of tubal gestation may be obtained by making an opening into the culdesac of Douglas, a minor procedure, free from all risk, if properly done. The presence of free blood always verifies the suspicion of tubal gestation.

PROGNOSIS

The prognosis, so far as life is concerned, except in cases of malignant disease, is generally good. This is even true of tuberculous salpingitis, if recognized sufficiently early to be treated properly. The restoration of the patient to health, that is, to a normal condition, from a pathologic point of view, depends on circumstances. I believe, for instance, that cases of gonorrheal salpingitis, particularly when the result of an acute infection, will in the majority of cases result in a complete recovery, if properly treated, and if care be taken that renewed infection does not occur. To comply with the latter demand it is necessary that the source of infection be avoided until all danger of reinfection from that source has passed. The man should be carefully examined by some one who is competent to make such examination.

When closure of the fimbriated extremities of the fallopian tubes has taken place and when, as the result of this, the tubes have become more distended, the prognosis of a cure from a pathologic point of view is out of question. It is in these cases, too, that recurrent attacks of pelvic peritonitis are quite common.

The acute gonorrheal tubal inflammations occurring during the puerperal state present an especially serious aspect, particularly as to the symptoms which are present. The prognosis in these cases, if peritonitis has developed, seems almost positively fatal; and yet, if one keeps one's head and employs proper treatment, nearly all such women recover.

One of the chief features to be observed in affecting cures is to see that abstinence from sexual intercourse is adhered to.

The prognosis as to sterility after a gonorrheal salpingitis has been acquired is not readily answered. Much depends on the treatment that had been instituted; whether the severity of the disease and also its duration had been shortened. If both questions can be answered in the affirmative, it is likely that the prognosis from that side may be considered as "favorable."

TREATMENT

The principal factor in the treatment of tubal inflammation is absolute abstinence from sexual relation; and to bring this about the avoidance of eroticism. To secure this, it is necessary to individualize, to consider the surroundings and the social position of the patient. It is an easy matter for a physician to say that these factors should be avoided, but unless definite directions are given, the orders will not be followed. I know of nothing more difficult than the observance of this, the most important part of the treatment. In some — indeed in many — circumstances it is a physical impossibility.

Knowing that by the avoidance of sexual emotions, physical rest and proper hygiene the greater number of women with a first attack of tubal inflammation can be cured, one should not be hasty in advising a surgical intervention, especially one that will unsex a woman.

In addition to the fundamental principles of treatment, the use of copious hot-water douches, boro-glycerid tampons — either plain, or in combination with ichthyol — vaginal boluses of fuller's earth, made into a proper mass with glycerin, are remedies that give good results.

In cases in which we fail to bring about a cure, even though it be only a symptomatic cure, we may consider a surgical intervention, particularly in chronic cases, and those with recurrent attacks of pelvic peritonitis. But, I again repeat, one must not come too hastily to a conclusion that a surgical intervention is imperative. Since the prognosis, from surgical interventions, has become so good in ordinary surgical work, there is much needless operating. Before an operation is performed in such cases, it is best, in the interest of the patient, to get the advice of an experienced gynecologist, a man who has devoted a sufficient number of years to that branch of medicine, and has observed the effect of treatment and of operations, to enable him to speak authoritatively. No one, not so trained, and not having such experience, is competent to advise correctly in such cases.

In acute tubal inflammation, when we have distended tubal sacs and if the pyosalpinges are attached to the flour of the pelvis, it is best to incise them *per vaginam*, to place a strip of gauze in the opening made and to drain. If it be a single large tubal sac, as is usually the case when it is a first infection, a number — the greater number — of such patients may be cured, providing the other rules of treatment, previously mentioned, are carried out, and if no reinfection take place.

To get the best results from a vaginal section, it is necessary to make it large. I usually make the section through the vagina large enough to enable me to introduce my hand through the opening. An opening so large has the advantage that one can feel with precision the condition of the pelvic organs. Moreover, the necessary work can be done intelligently; and last, but not least, the dressings, subsequently necessary, can be made with less pain to the patient. I use for this purpose the pelvic abscess instruments devised by me a number of years ago.

Conservative operations, such as mentioned, are useless if the tubes are sacculated. This cannot, however, be determined until one has the fallopian tubes in direct contact.

In regard to abdominal operations, in purulent inflammation of the fallopian tubes, I prefer the longitudinal incision, although many surgeons of late use the transverse, usually called the "Pfannenstiel" incision. My preference is caused by the liability of the abdominal parietes to become contaminated with purulent secretion during enucleation of the salpinx, and, should the pus be not sterile, we may have suppuration of the abdominal walls, which, if it takes place in the case of a transverse incision, is much more tedious to overcome than in the old form of incision. Moreover, in the horizontal incision, the muscles and fascia can easily be protected with the peritoneum, and contamination of the peritoneum with pus is not such a serious matter. Full pelvic elevation in these cases is desirable, so that one may see, and not work by the sense of touch alone, as was universally done formerly.

Before deciding on an operation, one should weigh carefully every factor, since, as was mentioned in the beginning, tubal diseases do not always cause symptoms. Indeed, two patients with greatly distended pyosalpinges may, in the one instance, have no symptoms at all or symptoms so slight as not to annoy, and, in the other, have symptoms so serious as to make an operation imperative. And still another with objectively insignificant symptoms may be such a sufferer as seemingly to make an operation a necessity to relief. All physicians of extensive experience can undoubtedly verify this. An illustration not infrequently presented, showing how necessary it is to consider all phases, are patients with marked tubal inflammation—pyosalpinx—who seek advice only because of sterility.

Hence, while the objective symptoms are of the utmost importance, they should never, by themselves, form an

indication for a surgical intervention. The subjective symptoms are the ones that must, in nearly every instance, determine our course concerning an operation which has for its object the ablation of the whole, or a part of the adnexa. Here is the great distinction for an indication for local treatment. To again illustrate with a supposed case of sterility: A woman may have no other reason than sterility for consulting a physician, but a careful bimanual examination would show the presence of thickened fallopian tubes, which need not be at all sensitive on examination. An interview with the husband would reveal that he had had, before marriage, an attack of gonorrhea. Intra-uterine treatment, so-called "tinkering," in such cases, may be fraught with dire result. The same may be said of a curetting, an operation particularly frequently done by family physicians, for the cure of sterility. I have seen several patients die as the result of this supposedly "safe" operation. I have also a few times, as the consequence of such local treatment, seen the necessity arise, later, for the removal of the adnexa.

In connection with this, I wish again to call attention to the danger of ever using the curet, in instances of gonorrheal infection, if there is the slightest evidence of tubal affection.

Another point to which attention must be directed is the avoidance of radical operations during the stage of acute pelvic peritonitis caused by tubal inflammation. When proper care is given to such patients they usually recover from the peritonitis. Operations at such a period are fraught with much risk to life, the microorganisms then being quite virulent.

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ABSTRACT OF DISCUSSION

DR. RUFUS P. HALL, Cincinnati: I assume that Dr. Boldt means that only in the minority of cases there are practically no symptoms indicating the presence of salpingitis. In my experience the presence of salpingitis with fixation of the tubes and uterus is discoverable by bimanual examination and close inquiry into the clinical history of the case. Put the patient on the witness stand, as it were, and there will be something in the history suggestive of the disease. I have had patients give a vague history and if we stopped at that we should not have much idea of the conditions. But take her history, make a smear and you find the big "G." The woman perhaps has had no babies. There may be a distinct history of latent gonorrhea from her husband within a few weeks after marriage which is the cause of her sterility. While it may be true that the woman with pus tubes from gonorrhea and in which conservative operation has been done is able to bear children, it is certainly rare. That is not the usual outcome as every surgeon in this work knows. I think with Dr. Boldt that it is our duty to conserve for the woman everything you can. An important question, however, in these cases is: What is conservative surgery? I do not think it is conservative surgery to save a tube in a woman who has had gonorrhea and at a later date be compelled to do another operation. My experience in these cases has been that a second operation is necessary in the gonorrheal cases if one leaves a tube, and not in the tuberculous. If you conserve tubes in gonorrheal infection you do not do conservative surgery. I believe that in all these women during menstrual life, if you must remove both tubes, you ought to save both ovaries if you can. If you cannot save one ovary, save a piece so that you do not cut off the menstrual life of the woman. If she menstruates she is functionally a woman in sex life, but she is sterile as before but is relieved of her abdominal pain, because you remove the diseased tubes.

The differential diagnosis between tuberculosis and gonorrheal salpingitis is a very important point. I do not believe it is possible to make a strictly differential diagnosis in all of these cases. I believe, however, that in a large majority of the cases the doctor can say the condition is tuberculosis or gonorrhea with almost as much certainty as a man can tell a tumor is a fibroid or a cyst. It is worth while to take the time to know. In gonorrhea the smear almost always gives you a clue; you will have the temperature at 99. In tuberculosis you never have the temperature at normal in the forenoon. It is up every day above 99.5 in the afternoon and down in the morning just as regularly as the sun rises and the tide comes in.

THE ETIOLOGY AND TREATMENT OF SUPERFLUOUS HAIR *

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Women suffering from the overgrowth of hair on their faces have not received the same consideration from the profession accorded patients with nevi and other disfigurements of equal moment, and therefore these miserable ones are deflected to beauty doctors and various irregulars, almost invariably ignorant, incompetent and unscrupulous.

Subjects of this growth are notably sensitive and depressed. Many become embittered, melancholy and resentful, to the detriment of their mental and physical health. The disposition is often affected to such an extent that they lose their incentives; and in more than one instance have such patients asserted that death was preferable to the life of embarrassment they had to live, as they felt that they were objects of pity, ridicule and scorn. Few endure their disfigurement with philosophic resignation.

It is no doubt true that the treatment is difficult, tedious and relatively unprofitable to the operator. But if it can be done so as satisfactorily to remove what constitutes a bar to the happiness and health of the afflicted, it ought to be as much our duty as any other work. And there can be no defense for neglect of it—neglect, which seems commonly due to the fact that it is financially unprofitable—except in those instances in which the physician is occupied in other and equally important works, and really cannot find time for it. To those who are in the profession of medicine largely for what money they can make, this paper has no excuse. For those to whom the relief of distress and the conservation of human happiness appeals, it requires none.

It is possible to remove any growth of hair, permanently, without scarring and without pain worth considering. It takes ten times as long to remove ten hairs as it does to remove one. The number of hairs calling for removal means proportionate work. But it is as feasible to remove a thousand as to remove six.

The grateful appreciation of this class of patients stands out in contrast like an oasis in the desert of ingratitude which we encounter as our common experience.

At the time I had instruction in Vienna in Kaposi's clinic, Spiegler made a demonstration of the electrolysis of hair, and his class had an opportunity to participate in the work. It was crudely, painfully done and the scarring was so considerable as to leave doubt as to

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whether, in view of the resulting disfigurement, the remedy was not worse than the disease. It soon after became necessary for me to attempt relief for superfluous hair and the following technic has been worked out to my satisfaction and that of my clients.

The patient is placed in a comfortable chair, high enough to allow the operator to work without stooping. A good light is requisite, north exposure being best. The area involved is mopped with absolute alcohol. Dry skin is a very poor conductor and the absolute alcohol dehydrates the surface of the skin. The funnel-shaped orifice of the hair follicle is often filled with inspissated sebum and epithelial debris, which obstructs the entrance of the needle. The alcohol macerates this and facilitates the passage of the electrode. Absolute alcohol is to some extent germicidal and inhibits infection. It is also very efficient in obtunding sensation.

The needle is introduced without force, until it reaches the bottom of the follicle or meets resistance. Current is then passed until the follicle whitens or the bubbles serve to mark the site of the hair follicle. The hair is epilated and the needle returned through the vacated follicle, until it rests on the papilla. Enough electrolysis is then employed to destroy the papilla.

The alkaline caustics set free in the operation are not selective. If the effort is made to destroy the papilla when it is surrounded by the hair bulb, all tissue in the same radius from the needle must also be destroyed. If the hair is epilated and the needle placed directly on the papilla, obviously much less tissue need be cauterized.

If effort is made to force the needle in by the side of the hair, the crowding may cause a lesion of the sheath, and the needle, free in the corium, goes wide of the papilla; or the sheath may buckle, making it impossible for the needle to traverse it to the papilla.

Meanwhile, the application of absolute alcohol goes on. After an hour's work the patient's skin may show no resentment — neither redness nor swelling, but the reaction varies in different subjects and in the same subject at different times. Usually there are tiny marks of the treatment to be seen for a day or two, but they are ephemeral, and the face is left finally quite free from any mark or scar.

The needle is rounded on the end and preferably olive-pointed; the shaft, being smaller than the bulb point, has less area of contact and causes less electrolysis. The needle-holder is a modification of the one commonly sold by instrument-makers. In the two jaws are placed rivets with channeled heads which grasp the needle, allowing a pivotal motion, enabling the needle to be quickly set at any angle, conforming to the axis of the shaft of the hair. This enables the operator to rest his hand on the face of the patient, to keep the hand out of the field of vision and facilitates steadiness, accuracy and speed.

The positive pole is grasped by the patient's hand. If difficulty is experienced in returning the needle to the vacated follicle, the patient breaks connection until the needle is introduced, to avoid superficial electrolysis. The current is from ⅓ to 1 milliampère. This calls for more time to accomplish the development of adequate alkalies than would a stronger current. But it is painless and the results are better. The ampèrage should be measured, not guessed. Frothing about the needle is not a safe guide, whether in salt solution or in the tissue.

For the source of electricity, the La Clanche type of cell (the carbon cylinder, ammonium chlorid type) provides the smoothest and most satisfactory current, and, although bulky, is cheap and durable.

There are periods when the skin shows irritable, urticaria-like resentment to electrolysis. When this is manifest, it is better to postpone treatment. The operator should not remove hairs closely grouped, all at one treatment. Nor should the remaining hairs be treated until all reaction from the previous electrolysis has passed.

Within practical bounds, the smaller the diameter of the shaft of the needle employed, the nicer the technic and the better the result.

The minimum of electrolysis adequate for the destruction of the papilla should be employed. It is better to risk one occasional return and be sure of no scarring than to exceed this and find later an indelible scar. The statement that scarring after this treatment is relative — that it always follows in some degree — is not in accord with my experience. Scarring is unnecessary in any degree. Nor is there any pain; during a long treatment patients have frequently fallen asleep. The thing most commonly irksome to the patient is the necessity of keeping quiet.

While electrolysis thus applied serves as a satisfactory cure for superfluous hair, it does not prevent its development. I have studied this anomaly with a view of correcting the tendency, and an experience with a large number of patients develops the following observations:

The majority of cases occur among women living *absque marito*. In two cases the development of hair began after interruption of the marital relation and disappeared on its resumption. One patient with considerable overgrowth of hair on lip and chin had the satisfaction of seeing herself rid of it within two years after marriage and the birth of her first child. Another, who had dysmenorrhea from an acute flexion of the uterus, had the overgrowth disappear when this was corrected and menstruation became normal.

Just as toxemias destroy hair on the top of the head, where hair ought to grow, so toxemias seem responsible for the overgrowth of hair on the face. Often we find a poor growth on the scalp, while the exuberance of hair on the face causes the bearer to seek relief. Indican is conspicuous in so many of these cases that the relationship must be accepted. With an improved metabolism the tendency to superfluous hair is modified or overcome. Seborrheids are frequently associated with hypertrichosis.

In diabetics, while thinning of the hair on the scalp is commonly observed, it is not very unusual to see the growth increase on the face. In a case of malignant endocarditis, the growth of hair on the face was notably rapid and exuberant. No cases have been observed in which the subject was in the enjoyment of the full normal physiologic functions and free from toxic influence. Many times the patients have insisted that they were perfectly well and probably believed themselves so, but searching analysis has invariably found some departure along the lines here suggested.

Overworked spinster school-teachers furnish the largest quota of my cases. Manifestly it is not always possible to remove the cause of these tendencies to superfluous hair. But many are susceptible to varying degrees of relief, without resort to electrolysis.

Every case is entitled to careful analysis, and I am confident that, if the same zealous investigation of this class of patients were undertaken which the profession devotes to others, no more worthy of it, there would be fewer cases of superfluous hair requiring operation.

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ABSTRACT OF DISCUSSION

DR. W. O. ROOP, Dayton, Ohio: I regard electrolysis as one of the most unsatisfactory procedures in the dermatologic armamentarium. My experience with the method has been very unsatisfactory. It is, of course, possible to remove hairs with the electric needle, but the patients expect that they will not recur, and in my experience a certain number of the hairs will always come back, and for that reason the treatment must be continuous. If the attempt is made to introduce a straight needle into the curved cavity, it will often perforate the hair follicle and the result will be unsatisfactory. I have tried to explain this to some of my patients, but, as a rule, the explanation does not prove satisfactory, and when the hair recurs such patients are apt to become "knockers." Instead of electrolysis, I prefer to treat these cases by persistent epilation. After this procedure the new growth of hair is often finer than before, and it is whitened and rendered less noticeable by the application of peroxid of hydrogen. Epilation can be done rapidly and, in my hands, at least, it his proved more satisfactory than electrolysis.

DR. M. L. RAVITCH, Louisville: One must be an artist to use the electric needle effectively; it is not necessary to be a scientific man to be well versed in its use. One point is not to prolong the sittings unduly; not to try to remove too many hairs at one sitting; fifteen or twenty are enough. The man who is sufficiently careful and artistic will be successful with this method of treatment.

DR. J. B. KESSLER, Iowa City: While electroylsis for the removal of superfluous hair is very tedious and often unsatisfactory work, I am told that a good operator can remove about 85 per cent. of the hairs by this method, although that is better than I have succeeded in doing. I confess that the method has its drawbacks. For instance, after the removal of the hairs about the chin, the lanugo hairs will become stronger under the stimulating effect of the electrolysis and we will have to remove those also. I have also seen a great deal of scarring produced by electrolysis, particularly on the upper lip, and it has been very noticeable. While the treatment is often unsatisfactory, still in some cases, particularly those of women with dark, disfiguring hair on the face, we cannot refuse to undertake it, even at the risk of being called "beauty doctors." I do not agree with Dr. Roop that the hairs are apt to grow in finer after epilation; my experience has been quite the contrary.

DR. GEORGE H. FOX, New York: The work requires a certain delicacy of touch which the majority of men do not possess. In my entire experience, I have found only one assistant who could do it in a satisfactory manner. Some years ago Dr. J. C. White of Boston made the statement that during the past ten or twenty years there had been no advance made in this operation, and the same remark holds good to-day. Various suggestions have been made from time to time to improve the technic, and I have given them a trial, only to find that the simplest and best method is the one to which the individual operator has become accustomed. I use a simple, flexible needle, after having tried various others without satisfaction. I prefer a very small needle, and the entire success of the procedure depends on introducing the needle into the follicle, just as a sound would be introduced into the urethra. This cannot always be done, but large, coarse hairs can be destroyed in 100 per cent. of the cases. It is the only method I know of for the eradication of superfluous hair. The use of absolute alcohol in connection with electroylsis, as outlined by Dr. Baum, strikes me as favorable theoretically, and I shall try it. As to the use of soothing ointments, I have found that a simple antiseptic application is all that is necessary. In some cases in which the hairs are on the lip, I think it is impossible to remove them without slight scarring; in other cases, large numbers of hairs can be removed with practically no scarring. I recall one case in which I removed 12,000 by actual count without any scarring.

DR. L. DUNCAN BULKLEY, New York: I have been using electrolysis in hirsuties for many years; indeed, before this treatment was suggested I described a new method of treating hirsuties in one of the earlier volumes of the *Archives of Dermatology*. This was the first suggestion of treating such individual hair by means of a three-cornered glover's needle in a proper handle. This was dipped in phenol (carbolic acid) and bored into the follicle, destroying it and the papilla, and I reported cases treated successfully in this way. The electric current was a later addition, and has, of course, supplanted the other. I wish to call attention to the advantage of a blunt point to the needle, rounded off, as Dr. Baum has recommended. With such a point, the needle is much less likely to enter the opening of the sebaceous glands or penetrate the sides of the follicle, and thus fail to reach the papilla. I am heartily in accord with what Dr. Baum said in regard to the constitutional elements connected with hypertrichosis, and I always give additional internal treatment. In this connection I would like to call attention to the fact that the growth of superfluous hairs is a common incident among insane women.

DR. WILLIAM B. TRIMBLE, New York: I have used alcohol for a number of years in connection with certain phases of dermatologic work, but not for the purpose of preventing scarring after electrolysis, as described by Dr. Baum. I have employed it simply for antiseptic purposes. I have never seen any noticeable scarring after the removal of hairs with the electric needle.

DR. JOSEPH ZEISLER, Chicago: I recall an article by Troxler which recommended the use of pumice stone for the removal of superfluous hair on the face, employing the stone as a polishing agent.

DR. WILLIAM S. GOTTHEIL, New York: I advised the use of pumice stone in one case, and the only result was a slight irritation of the skin.

DR. J. B. KESSLER, Iowa City: A few years ago I saw a young woman from whose face I removed about 1,200 hairs by electrolysis. She still had some on the cheeks which she treated with very fine emery paper.

DR. H. C. BAUM, Syracuse, N. Y.: I think the use of pumice stone in these cases is absolutely unjustifiable. While it rubs away the fine hairs, it eventually increases the growth of the hair. The equivalent of pumice stone has been used in uncivilized countries for many years instead of shaving. I think electrolysis is far superior to epilation in the treatment of hypertrichosis. By the free application of absolute alcohol, and a blunt-pointed needle, even the hairs on the lip, to which Dr. Fox referred, can be removed without scarring. Perhaps the use of a needle-holder steadies the hand and insures greater accuracy. The success of the method depends largely on the skill of the individual operator. In my own experience, not more than 2 per cent. of the hairs recur after electrolysis. I have frequently removed from sixty to seventy hairs in the course of an hour. I have never heard these patients complain of pain, and the best friends I have are among the women who have been easily and permanently relieved of this affliction.

CUTANEOUS REACTIONS *

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SAN FRANCISCO

The greatest weakness in the science of dermatology to-day is the deficiency in the knowledge of causes. The greatest need of the practitioner is not, as is often supposed, the ability to attach a name to every lesion of the integument but to have some idea of the relationship between surface manifestations and what is taking place within the body. The function of the dermatologist is not to furnish short cuts to simulate the glow of health but to interpret correctly the significance of cutaneous lesions as applied to the organism in general.

An interesting sign of progress toward knowledge of causes is the tendency revealed by recent text-books to classify skin diseases on a basis of etiology. The classi-

* Read before the Cooper College Science Club, Feb. 5, 1912.

fication of skin diseases on a strict pathologic basis so commonly in use would at first glance seem to be of great service. One would say that by means of such grouping it is at once apparent what is the nature of the change in the skin—whether inflammation, hemorrhage, atrophy, hypertrophy or what not. But of what avail is the knowledge that a given process is an inflammation so long as with it there comes no light on the cure of the condition? True, we have definite principles in the treatment of inflammation and these we can apply; but let us not deceive ourselves into the notion that in allaying the inflammatory reaction we have treated the case successfully, for, unless we have searched deeper and acquired some idea of the ultimate cause with the purpose of preventing recurrences, we have not done our work well. It comes down then to what we have just said, that the highest function of dermatology is the interpretation of morbid cutaneous manifestations. And this brings us to our subject proper.

The term "cutaneous reaction" was first employed in its present sense by Brocq, to whose instruction and text-books I am indebted for much of the material in this paper. He divides all skin diseases into two main groups. The first consists of true clinical entities or diseases originating from some definite, constant cause, usually external, such as traumatism, poisons, microbic or parasitic invasion; the second group includes the so-called cutaneous reactions which are the outward manifestations of various morbid conditions originating within the individual. These may result from a variety of causes and may be of purely internal origin, though, by reason of individual predisposition, various outward influences, as slight traumatism, parasitic and microbic infections, etc., may suffice to cause a reaction which would be impossible in one not predisposed.

This difference may be well illustrated by scabies, which is typical of the first group. Let the acarus gain an entrance into the skin and, regardless of predisposition, heredity, sex or season—regardless of anything—there result certain lesions which are characteristic. There we have a true clinical entity. On the other hand consider the question of urticaria. Several children are bitten by fleas; one, apparently sensitized, reacts with an urticarial eruption while the others show no reaction at all.

Now, whatever may be the objections urged against this grouping of diseases it has this manifest merit. It indicates at the outset one class of cases in which the treatment may be direct and specific, requiring no careful internal diagnostic methods, as distinct from another group, which requires faithful attention to general diagnostic detail. It is in the successful treatment of this second group of cases that the real test of dermatology lies.

The consideration of this group of cutaneous reactions rests largely on personal characteristics. Witness, for example, the various effects of the administration of the iodid of potassium in seven different individuals. The first one tolerates it admirably; the second suffers from sore throat, coryza, swelling of eyelids, increased lacrimation and headache; the third develops an iodid acne; the fourth shows a marked purpura; the fifth reacts with anthrax-like acne; the sixth presents large red nodules; the seventh is stricken with successive bullous crops somewhat suggestive of severe forms of pemphigus.

Antipyrin reacts in almost as many ways, and further illustrations are not wanting to prove the diversity of results according to the individual.

Approaching the question from another point of view we may analyze the clinical histories of several patients affected with the same lesions of the skin. Let us again illustrate with urticaria. One has had an outbreak after having eaten shell-fish; a second, after strawberries; a third, after veal; a fourth has developed hives after having taken chloral; in a fifth it is a symptom of malaria; in a sixth it is associated with hydatid cysts; in a seventh there is a deficiency or excess of thyroid secretion, while in an eighth there is nothing more tangible than an undoubted neuropathic basis, or a sensitized state by reason of which an attack is determined on the slightest external irritation or the slightest emotional influences.

We may then, with Brocq, admit the following as general principles:

1. The same causes may provoke different reactions in different individuals, and

2. The same eruption may be provoked by the most diverse causes in predisposed subjects.

This doctrine of cutaneous reactions has also the great advantage of presenting lesions of the skin in their correct places, attaching to each its proper relative value and not making the commonplace error of elevating a mere symptom to the dignity of a disease. The true morbid entity has a fixed etiology, but not necessarily a constant symptomatology; e. g., syphilis has always a definite etiologic factor but presents most diverse symptoms. The cutaneous reaction, on the contrary, has no fixed etiology but presents constant objective signs.

The consideration of skin lesions as reactions from variable internal causes involves a study of both inherited and acquired predisposition. The former has to do with racial and familial tendencies as well as the parents themselves; acquired predispositions are connected with such general influences as sex, occupation, environment, habits of life, including hygiene, the evolution of life with special reference to such phases as dentition, puberty, menstruation, pregnancy and the menopause; further, such affections as modify the general state of a patient and his morbid receptivity, e. g., anemia, neurasthenia, the so-called gouty diathesis, diabetes, organic disease, general infections, as tuberculosis and syphilis, as well as any intercurrent acute disease.

Then, as secondary to these diverse predisposing causes, comes the long list of exciting causes which act only in those already predisposed. These again may be of external or internal origin. Chief among the external factors is traumatism, but this is effected in countless ways through atmospheric influences, chemical agents, mechanical means, parasites, microorganisms, etc. The internal exciting causes are also numerous but for present purposes may be mentioned under such general heads as improper diet, defective elimination, disorders of the nervous system, the circulatory system and various organic affections.

This indicates only in outline the etiologic factors to be considered. With all their ramifications they present an enormous field to be traversed in order to settle definitely on the ultimate cause in a given case. Brocq includes provisionally under the general title of cutaneous reactions all those dermatoses arising from within the individual. He divides them etiologically into four main groups:

1. Affections in which disorders of the nervous system play a major part, e. g., dermatoneuroses and reflex dermatoses.

2. Affections apparently connected with troubles of nutrition in the tissues which may be intimately con-

nected with the foregoing, as various hypertrophies and anomalies of pigmentation, etc.

3. Affections apparently having to do with deviation of the normal type of the tissues and which correspond to many tumors of the skin.

4. Those remaining eruptions which Brocq calls cutaneous reactions *par excellence*—a group which has always resisted all efforts at satisfactory classification.

Now, these cutaneous reactions in the restricted sense are divisible into two classes according to whether or not pruritus is the chief symptom, or, more than that, whether or not itching is antecedent to the outbreak and contributes toward its production. Under the influence of some of the causes already enumerated an individual suffers from itching. There is no evident lesion. The subject scratches or rubs the field affected and, according to the individual predisposition, the skin shows a reaction. Sometimes, as in pruritus senilis, there is no visible lesion—at least not for a considerable time; then little by little there develops a certain degree of papillary hypertrophy and acanthosis. Sometimes, as in lichen simplex, the histologic changes of lichenification, hyperacanthosis and papillary hypertrophy develop with variable rapidity and intensity. Sometimes an edema of the papillary layer is developed with more or less cellular infiltration; the epidermis may remain sound or become edematous; inter- or intracellular vesicles may be formed and, according to the intensity of the process, may separate the epidermis either at the papillary layer or beneath the stratum corneum, forming deep or superficial vesicles. These changes in the epidermis are accompanied by variable changes in the corium, but cellular infiltration usually plays the leading part. According to the degree of infiltration and the character of the infiltrating cells various types may be distinguished. These histologic changes, in which congestion is the principal process, correspond to the lesions known as lichenification, urticaria, lichen urticatus, true vesicular eczema, dyshidrosis and bullous erythema multiforme.

These, then, are the pruriginous reactions. They form a closely connected group and demonstrate the fact that the skin reacts to outward influences as scratching, etc., in the same diverse ways as it does in response to internal influences, the illustration of which was furnished by citing the effects of iodid administration.

The second class of this restricted group of cutaneous reactions consists of those eruptions in the production of which the pruriginous element has apparently played no part, in which the itching when present is a symptom and purely consecutive. This group is less sharply defined than the preceding and the criteria for placing reactions in this class are the absence of any known organism, the absence of any other etiologic factor, such as lesions of the nervous system, troubles of development, etc., and the possibility that the lesions may alternate in the same subject with other cutaneous or visceral manifestations. It is furthermore possible, as Brocq indicates, that subsequent advance in etiologic knowledge will tend to deprive this group of its members one by one.

The histologic changes in the members of this group are much the same as in the previous group, viz., various stages of inflammation with dilated vessels, diapedesis, vesiculation, formation of bullæ, perivascular infiltration, acanthosis, hyperkeratosis, etc. These correspond to what are known clinically as simple erythema, herpes, pemphigus, pityriasis rosea and psoriasis with its allied eruptive forms.

We have, then, narrowed down to reasonably close limits in these two classes those eruptions of the skin whose etiology is so little known or so variable as to make of them a class apart, clearly separated from the true clinical entities about whose causes we are certain.

To one who is familiar with the usual dermatologic classifications and nomenclature this must appear simple, though to one who is not occupied with these matters the whole scheme may seem complicated. In actual practice the difficulties most likely to be encountered arise from the following facts which, however, apply to any other classification:

1. An eruption may be of mixed type because it develops on some antecedent abnormal condition of the skin, e. g., an eczema on a preexisting ichthyosis.

2. An eruption may be composite because two or more distinct reactions occur simultaneously in the same subject.

3. One eruption may be superimposed on another, e. g., a microbic dermatosis may be added to a parasitic infection or *vice versa*.

4. Artificial eruptions of external origin may complicate cutaneous reaction or microbic infections, or even both at once.

5. A cutaneous reaction may be complicated by a microbic infection or *vice versa*.

This coexistence of dermatoses is a matter of everyday experience. Fordyce, speaking on this point in a recent article, refers to the large number of cases usually diagnosed as eczema which have been secondary to some antecedent lesion or disease of the skin, such as scabies, infected wounds, abscesses, furuncles, intertrigos, sinuses left after operations on bones, etc., and agrees with Engman in the use of the term infectious eczematoid dermatitis. That is the equivalent, according to this doctrine, of recognizing the coexistence of a definite microbic infection and a cutaneous reaction. The very common observation of urticarial wheals in subjects of scabies is an evidence of a cutaneous reaction complicating a true entity due to parasitic invasion.

These reactions assuming different forms in accordance with the special susceptibilities in given cases are spoken of by some writers, especially of the French school, under names derived from the dermatoses which they most closely resemble. Instances of this are the terms "lichenification" and "eczematization."

From what has been said it is apparent that not only the relationship which these reactions of the skin bear toward other cutaneous lesions must be borne in mind but also their relationships with visceral conditions. This is strikingly illustrated at times in the balance between a nephritis and an eczematous reaction. So long as a certain amount of serous effusion finds an outlet through the oozing from the skin the kidneys struggle along tolerably. The sudden crusting of the surface or its sudden contraction by astringent applications is often coincident with exacerbations in the inflamed kidneys. Further illustration is afforded by observing the alternation of an urticarial reaction of the skin with an asthmatic crisis. The same apparent interchangeability is often witnessed between gouty conditions and various reactions of the skin.

Now, the object of all this is not to quibble over mere terms. It is not that we would do away with such time-honored names as "lichen," "eczema" or "hives." It is rather to call attention to a broader conception of dermatology which leads us from the false sense of strength with which the mere possession of a name

beguiles us into that safer attitude which impels us toward the search for the ultimate cause.

Recent work along the lines of internal secretion, the question of anaphylaxis from food or bacterial proteins, studies in general metabolism, all offer attractive fields to workers in dermatology. This work, however, as Fordyce aptly remarks, must be in active cooperation with the experimental pathologist, the histopathologist and the chemist.

240 Stockton Street.

THE CARE OF THE MOUTH OF THE SICK*

WILLIAM CUMMINGS FISHER, D.D.S.
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That the mouth of the sick does not receive the attention that it should is, I think, a fact sufficiently well established not to need further proof submitted at this time. Any one of you stomatologists can, I am sure, cite case after case from your own private practices, in which your patients have presented themselves to your observation, after a prolonged illness, their teeth showing signs of rapid decay due to a period of the neglect of mouth hygiene.

I am sure that much evidence of the general neglect of the mouth of the helplessly ill has come to the notice of the dental surgeons attached to hospitals and especially those larger institutions with public or general wards. Any adverse criticism, therefore, that I may make of this condition must be assumed by the members of the dental profession as well as the medical.

That some feeble effort is made at times, in some cases, toward the maintenance of a clean and hygienic condition of the oral cavity, any one is willing to admit; but a feeble effort — and in a few cases — is admission that hygienic condition of the mouth is essential. Then are we all the more remiss in our duty toward the helpless sick and invalid, if we do not perform this duty fully.

Would a nurse for one moment shirk her duty regarding the administration of medicaments? Would she fail to bathe her fever patient? Would she neglect the stool? Emphatically, no. Then why has she not been more carefully instructed in the care of the mouth and the cleaning, by use of brush and mop, of the teeth; and being carefully instructed, why has not the physician seen to it that this work was as carefully done as any other? The condition of a patient's mouth should be the meter by which is registered the ability of a nurse.

You may say the facilities in our large hospitals are not adequate and that the nurse already has much to do. Both objections — and I have heard them both many times—should be dismissed with the answer that proper facilities should be provided.

Regarding the facilities, they are very good already in most well-equipped hospitals. A tongue-scraper made of ivory or steel, which could be sterilized, together with a cotton swab, could do in such severe illness where the vigorous use of a brush would be ill-advised.

But it should be emphasized that nothing can better take the place of the thorough brushing of the teeth and the massaging effects which this has on the tissues. For it is during prolonged illness, when the patient is unable to use the teeth in mastication of hard substances, that offensive masses of mucus form on the gingival borders of the teeth, encouraging the deposition of other salivary deposits and thus set up a highly inflammatory condition of the mucous membrane, which, while the patient is in a debilitated condition, has lost its tone and is susceptible to any irritation.

In addition to the usual brushing or swabbing of the teeth, it is very essential for the hygiene of the mouth and the general comfort of the patient that the mouth and throat be sprayed with a pleasant and efficient wash or mouth-bath. To get the best results, it is essential that the spray be driven by a greater force than can be obtained by any ordinary hand atomizer. By the use of compressed air of between 10 to 12 pounds pressure, the medicament can be driven into every little fold of mucous membrane and between the interdental spaces. To obtain the bed-side use of compressed air for this purpose, I have suggested mounting on a rubber-tired wheeled platform a 2-foot air tank and automobile pump, with a 6- or 8-foot hose attachment for spray bottles.

This tank can be filled by some attendant, while the whole apparatus is in another room or hall, if there be any objections to the sound of pumping. Enough air can be stored by sixty seconds' pumping to spray the mouth of ten to fifteen patients. I have one which I used before I installed a motor power pump, which the children used to delight in pumping. I state this simply to show with what ease it can be operated and that it would be no hardship on any nurse. The platform, tank and all, could be rolled from bed to bed and thus facilitate greatly this question of mouth hygiene in the large wards.

Now, an additional word regarding the care of children's teeth — and this will also apply in many adult cases. You will find sick children, who, although not dangerously ill and weak, will resent very often any marked attempt at mouth hygiene and especially the brushing of teeth. In such cases, I offer a bribe in the form of chewing gum, for a half hour a day, if they will have their teeth brushed just a little. In that way, I gain two things: the child permits *some* brushing of the teeth and by this together with the cleansing action of the gum-chewing, a rather clean set of teeth are obtained. In this manner, children can be brought through a long illness without the usual decay of their deciduous teeth, often preventing that most pitiable of conditions, namely, the aching or abscessing of teeth during convalescence. The gum, after use, is destroyed by burning, a new piece being used each time.

The direct and exciting cause of tooth-decay is the lodgment of particles of food between and on the teeth, and the fermentation of this food with the productions of bacteria and acids, which destroy tooth substances. The foods that undergo this fermentation are chiefly the carbohydrates, starches and sugars — just the character of food which a convalescent is likely to receive. This decomposition and fermentation begin very quickly, so that the nurse's attention to the mouth of the sick should be directed immediately after the patient has partaken of any food.

In the Department of Therapeutics about a year or so ago, THE JOURNAL, in speaking on mouth hygiene and its applications in the cases of the sick, advocated the use of hydrogen peroxid on swabs when ulcerations were noticed on mucous membranes. I desire to take exception to this for two reasons: First, it is very unpleasant to most patients and adds to the already unpleasant condition of the mouth; second, by its effervescence, it can readily cause an extension of the ulcera-

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

tion. These conditions, if they will not heal under an application of the usual solution of iodin, aconite and chloroform, should be treated with a caustic, touched with silver nitrate, and their growth and sensitiveness thus checked.

The use of hydrogen peroxid should be discouraged; for, if any pyrrheal pockets are present which contain pus, the effervescent action of hydrogen peroxid may cause a tearing of tissue and an extension of pocket. Slight ulcerations could be treated with a solution of boric acid and glycerin.

Where nasal obstructions cause the invalid to breathe constantly through the mouth, the dry condition which is found should be relieved by frequently moistening the mucous membranes with a solution of glycerin and water, to which a drop or two of oil of betula may be added. If patient is conscious, salivary stimulation may be obtained by use of ordinary ginger ale as a mouth-wash.

It is a question in my mind whether illness is not very often prolonged or convalescence greatly checked by an unhealthy condition of the oral cavity. I could relate several cases in my own practice in which the placing in a healthy state of the oral cavity hastened, if it did not altogether account for, convalescence. I would rather quote from another's practice a case published recently in one of our journals:

The dental surgeon was called in this case to do what was absolutely necessary to relieve the discomfort of a patient who had been confined to her bed for three months with intestinal infection. While placing two cement fillings, the operator noticed a congested condition of the mucous membrane and on pressure, pus was seen to exude from the gingival margins. To be brief, after three or four days of treatment and the use of a mouth-bath every half hour or so, this patient was able to leave her bed and take her meals with her family; her improvement from that time on was steady and rapid.

There is no doubt that such cases as these are not only helped, but cured by the institution of oral cleanliness. Is it then necessary for me to urge further the establishment of some degree of treatment and care of the oral cavity of the sick and invalid?

373 Fifth Avenue.

ABSTRACT OF DISCUSSION

Dr. Virgil Loeb, St. Louis: I think the blame in regard to the care of the mouths of patients in hospitals may be laid on the staff of these hospitals, especially the private ones. In my own city there are very few hospitals which have stomatologists on their staff and just as few whose lectures to nurses include lectures on the care of the mouth.

Dr. A. J. Flanagan, Springfield, Mass.: One great need that I have in mind is the question of the forceful use of a spray that has some pressure back of it. In the hospital at Springfield, with which I have been associated for some years, there is no compressed air apparatus, and in the cases that I have had charge of I have used the oxygen tank. Of course that is an expensive method of spraying the mouth but a very efficient one. Dr. Fisher has put forth an idea to-day which is original and most practical—the bicycle pump to get the proper pressure. We had a case in our hospital of three months' duration in which the expense of the oxygen used amounted to about $30, but it happened to be the case of a patient with plenty of money, and we used plenty of oxygen. On the other hand, with patients from whom the hospitals do not receive a great deal of income, and some which are practically charitable patients, they are a little careful about using oxygen. If dentistry is a part of the healing art why is it not possible for those who have a hand in the arrangement of these lectures to arrange to have at least one delivered to the nurses with regard to the care of the mouth in relation to health and disease. For years the hospitals at Springfield have had an annual lecture given by some dentist to the class of nurses on that subject. This is a practical point, and I think if we do not call the attention of the people interested in these things to it, and if we do not occasionally insist on it, we will accomplish very little.

Dr. Thomas L. Gilmer, Chicago: It seems to me that the most important point to be considered is the teaching of the nurses in the hospitals, on account, not of the work in the hospitals but of the work with out-patients. In the hospital in Chicago, with which I have been connected for nearly twenty years, there has been a course of lectures to nurses, and they have been instructed in the care of the patients' mouths during illness. It is not necessary to have an expensive apparatus for the purpose of cleansing the mouth; that is impracticable in the case of out-patients. I recommend for patients' use, especially those who have fractures of jaw and are wearing appliances, a bulb syringe with numerous openings on the side of the point by which the solution of water or whatever is used may be forced in between the teeth. The teeth can be very thoroughly cleansed in that way. It does not, of course, give as much pressure, and does not perhaps dislodge the débris to the extent that we might with compressed air, but it answers the purpose and is more practical for out-patients. I think that cotton is a poor thing with which to cleanse the teeth. It may be all right for cleansing the mucous membrane, but it simply forces the particles of food between the teeth and into the interproximal spaces where it will do more harm than good. I do not see why any ordinary soft brush will not answer in these places and on the tongue instead of a scraper, because we do not get between the papillæ with a scraper as we do with a soft brush. Every person should cleanse the tongue once a day, and certainly a sick patient should have the tongue cleansed once a day.

Dr. W. J. Lederer, New York: The institution with which I am connected, the German Hospital of New York, has had for the past four or five years in the curriculum of the training-school for nurses a series of lectures on the care of the mouth and teeth. There is another side to the care of the patient—the surgical care. The patient who is to be operated on for some intestinal trouble is carefully prepared, the surgeon sterilizes himself, his assistants and the nurses, and the patient's skin is sterilized, and yet nothing is done to the mouth, as a rule. Imagine a patient on whom such an operation is performed, with whom every precaution is taken and who yet is permitted to swallow pus by the teaspoonful—and that is not a fanciful picture but one which is seen in every hospital almost daily. Unquestionably the mouths of surgical patients should be looked after, and I would suggest that the surgical patients can be divided into two classes, the one to be operated on in one or two days or a week, and the emergency patients. With the latter we cannot go through that careful routine of treatment of pyorrhea, etc., but we can remove the pus pockets. It should be made a rule, if possible, that the attention of the surgeon be called to the fact that the mouth should be cleared of pus pockets, abscessed teeth removed and in that way the danger of infection from the buccal surfaces will be reduced, because we do know that no patient will recover from anesthesia or any disease, as one who has a sterile mouth. That is a factor which has not received much attention and nothing much has been done in this direction. The care of the mouth of the medical patient is also a chapter which should be looked into carefully. It is an established fact that pneumonia is frequently the consequence of intestinal fermentation producing auto-intoxication, and that the buccal surfaces play an important part in that; therefore the sterilization of the mouth should become a factor in medical diseases.

Dr. M. I. Schamberg, New York: No hospital in the future will be thoroughly equipped without an outlet beside each bed from which can be furnished compressed air for cleansing the mouth. I see no reason why a simple plant such as is

necessary for the supply of compressed air should be any great hardship on any institution. They are equipped with many similar necessities, such as plants for the care of the linen. We may teach the nurses what should be done, but we must equip them with the means wherewith to perform their work. The hospitals are usually very generous in supplying thermometers and other necessities, and compressed air as a means of complete cleansing of the mouth is certainly a necessity. In regard to the work outside of the hospitals, done by the nurses among poor people, I venture to say if the manufacturers of these various tanks were encouraged to supply compressed air in small tanks as they supply oxygen and nitrous oxid, they could do so at a nominal cost, and this contingency would be met. I really think that compressed air is the only feasible way of cleansing the interspaces between the teeth, save by the successful manipulation of the dentist in his office. There is no reason why the private household, which equips its bath-room with needle sprays and other forms of conveniences, should not be equipped with some means of providing compressed air for the complete cleansing of the mouth, and I think it is merely a matter of education along these lines that is necessary to bring about this advanced step.

DR. M. L. RHEIN, New York: Hospital service varies greatly in different parts of the country. In the city of New York it seems to have been practically impossible to obtain stomatologic service in the hospitals. In New York City the medical staffs of the hospitals have been jealous of permitting any intrusion on that staff. They are willing to have stomatologists in the infirmary. That is not my conception of the field of our work in the hospital. Whatever instructions the nurses may receive in the training department of the German Hospital, the patients receive very little attention. I agree with Dr. Lederer's statement about the preparation of patients prior to surgical work, and I know a great many able surgeons in New York City who insist on that procedure, and in other parts of the country. I agree with the great value of compressed air for this purpose in preference to anything else, and I follow that in my own practice. I have had installed a number of compressed air outfits in private houses at little cost, a motor pump can be attached to any electrical outlet, and that gives compressed air instantaneously. I have had great satisfaction in the introduction of such an apparatus, which is a comparatively cheap apparatus, and in a hospital it can be moved from bedside to bedside and simply attached to any ordinary electric outlet and the compressed air is immediately at the disposal of the operator as readily as the electric light would be. There is an additional objection to the use of hydrogen peroxid for this purpose, and that is the escharotic action on tissues, and especially in the delicate condition in which these tissues are during the early periods of convalescence from some diseases, those especially of the exanthematous type. At that stage the mucous membrane is in a delicate condition and anything as powerful as hydrogen peroxid is detrimental to the comfort of the patient and the welfare of the mucosa.

DR. JOSEPH HEAD, Philadelphia: Everybody has said that the mouth should be cleansed, but I will venture to say that nobody has said how it should be cleansed. In the first place, if the average dentist in this room will look in the mouths of his own patients, he will find that with healthy patients it takes constant coaching for them to brush their teeth often. The wisdom teeth are not ordinarily brushed at all. The twelve-year molars are not properly brushed, and the six-year molars are brushed fairly well, and the rest of the mouth may or may not be according to the care that the patient takes. This is to a certain extent due to the carelessness of the patient and also to the carelessness of the dentist in teaching many methods of brushing the teeth that are ineffective. In the first place, dentists, in giving instructions in brushing, tell the patient to brush up and down. If anyone will take a brush and try it on a skull, he will find that in brushing up and down the bristles will pivot so much that there is practically no bristle movement at all. We must understand that the wisdom teeth decay not because they are different from any other teeth, not because the structure is any worse, but because they are never brushed. Since dentists allow the ordinary patient to go with his mouth unbrushed, and can hardly get him to look after his mouth, I think it is hardly to be conceived that the mouth of the sick patient will get very much more attention. But, we will take it for granted, for the sake of argument, that the mouth is made sterile; that the floss silk is used to remove the débris from between the teeth, and then the mucous membrane brushed thoroughly with proper bristle friction, where the toothbrush does not pivot. And supposing then that we sterilize the mouth, I understand when etherization takes place the air goes through the fauces, and it strikes me that any sterilization of the mouth without the sterilization of the nasal cavity and the fauces would be of very little value. It seems to me that we can hardly by merely brushing the mouth and cleansing the mouth expect to protect the lungs of the patient during etherization without cleansing the nostrils and the fauces, any more than we could protect our feet from the mud, if we made a safe walk one-third of the way up to our porch and allowed the rest to be muddy.

DR. S. L. MCCURDY, Pittsburgh: Hydrogen peroxid is of no value in this particular field, or in surgery anywhere. In preparing the mouth for oral operations I always, the evening before the operation, have the patients cleanse their mouths with a brush, and then of course they get nothing in the mouth after midnight, and then when they awake in the morning and have their bath, the mouth is cleansed every half hour with normal salt solution. I rarely have any complications; indeed it is difficult under these circumstances to infect the mouth, and as Dr. Gilmer says, it is almost impossible to have an infection following an operation, and I rarely have any in mine.

DR. W. C. FISHER, New York: Regarding the case which Dr. Flanagan spoke of in which it cost $30 to use oxygen, if it was necessary to expend that amount for an entire outfit it would be lost to many hospitals forever. It has always seemed strange to me, especially in recent years, when there has been such a cry for pure food, pure drugs, and we have had Congress legislate to protect the public and give them something pure, when a person is sick or debilitated they are allowed to introduce pure food and pure drugs through mouths in such a condition that these pure drugs and pure foods are in a filthy condition by the time they reach the intestines for absorption. I think the reason that people do no brush the molars is that there are very few brushes on the market which the public can buy which will reach these places, but brushes with short bristles at the end can be made which will give plenty of movement at the end of the bristle—frictional movement. So again it is the fault of the dentist and not the patient, in advising them as to the kind of brushes to use. Dr. Gilmer objects to the cotton swab. I did not mean that the teeth should be cleaned with the cotton swab. I said that at times, such as Dr. Rhein has referred to, when the mucous membrane is so tender that a brush cannot be used, the best thing in that case is the cotton swab. It seems to me that if every barber's chair to-day can be fitted with an outlet for compressed air—and they do not consider it a great expense—that at least every bedside in our hospitals can have a compressed air outlet. Some one suggested that it would be practical to have compressed air supplied as nitrous oxid is now supplied in cylinders. There are automobile concerns already supplying these for automobiles, and there is no reason why the dentist could not get these and attach the spray bottle to them. Dr. Rhein, I think, is right when he speaks of the New York hospitals. Four years ago I was asked to take a position as dentist in one of the largest hospitals in New York, and the members of the staff told me that my position would be such that I would be confined to constructive work on the teeth in the public ward; just purely dental treatment, that is, the insertion of fillings occasionally and the treatment of abscesses. I would not be allowed any scope whatever as a stomatologist, and would never be allowed to treat an antral case no matter if that was purely an infection from the teeth. No, that is the work of the rhinologist. When I understood what they wanted, I told them that what they were after was a constructor of teeth, or possibly a leecher or barber, and I refused the position.

DILATATION OF THE LARGE BOWEL*

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During the last ten years attention has been called by a number of surgeons and medical men to certain conditions involving the colon. In these reports some observers have emphasized one group of facts and symptoms and others have reported other phenomena, until finally it now seems possible to correlate the accumulated evidence, to reconcile apparently contradictory facts and to build up out of what, for a time, seemed a puzzle of fragmentary bits of clinical observation a clear and well-defined picture of a pathologic entity, with fairly well-known etiology, with a symptom-complex sufficiently definite to make its recognition possible and with a therapy based on a thorough understanding of the condition and on the results obtained in actual practice in a considerable number of cases. It is unfortunate that we have not a short descriptive term for this disease. I suggest that some one coin a new word which will convey the idea of chronic constipation with resulting colitis, dilatation and atony of the colon, and as a more advanced stage of the condition, pericolitis with adhesions and obstructive symptoms, colic and ileus. On the whole, I think the best short description is the one given by Gerster, i. e., colitis and pericolitis.

In reviewing the literature of this subject one will find the following important articles bearing on it:

1. Credé, in 1887, before the German Surgical Congress reported three cases in which he had found adhesions, as the cause of chronic colic, and operated to cure the colic and, also, as a prophylaxis against ileus.

2. Maydl, in 1889, reported a case of chronic colic cured by resection of the intestine.

3. In 1893, Lauenstein[1] made an important contribution on adhesions and bands in the abdomen as the cause of severe continued colic. He quoted the cases of Credé and Maydl referred to above and, also, reported ten cases of his own. Lauenstein made the condition of colic due to these adhesions separate from ileus due to the same causes, and pleaded for exploratory laparotomy and removal of such adhesions, if found in the doubtful cases, which heretofore had masqueraded under the terms of abdominal neuralgia, local hysteria and neurasthenia, hypochondriasis, liver-colic, pseudogall-stone colic, stomach cramps from unknown causes, etc.

4. In 1894, Riedel[2] presented the subject of adhesions resulting from inflammation in the abdominal cavity, and reported a number of cases that belong to the group under discussion.

5. In 1895, Dr. Erwin Payr[3] discussed the subject of a peculiar form of chronic stenosis of the large intestine at the splenic flexure.

6. Our distinguished guest, Professor Rovsing, has so fully presented his views of a group of cases which border on this territory that it is unnecessary for me to add to them.

7. For several years, Arbuthnot Lane,[5] of London, in a number of publications has discussed the subject of the surgical treatment of chronic constipation.

8. In 1906, Paul Klemm[6] published a paper on "Chronic Appendicitis without any Acute Attacks." Many of these cases belong to this same group.

9. In 1908, Hans Haberer[7] from the Eiselsberg clinic published articles on "Chronic Adhesive Appendicitis." These also present a phase of our topic.

10. In 1908, Wilms[8] wrote a paper on the mobile cecum as the cause of many cases of so-called chronic appendicitis.

11. In 1909, Jabez Jackson[9] published a paper on "Membranous Pericolitis."

12. In 1909, Fischler[10] published an article on "Typhlotomy (Dilatation) and Atony of the Cecum as an Independent Disease and Its Relation to Appendicitis."

13. In 1909, in Bruns' *Beiträge*, Klose wrote on "Clinical and Anatomic Consideration of Mobile Cecum."

14. In 1910, Stierlin[11] wrote from the Wilms' clinic on the mobile cecum as the cause of many cases of so-called chronic appendicitis and gave the results of the cecopexy.

15. In 1911, Gerster[12] wrote on "Chronic Colitis and Pericolitis."

16. In 1912, A. Blake[13] discussed the subject of "Voluminous Cecum" and suggested a reefing operation as a cure.

17. From the medical side, one of the best articles is by Bittorf[14] from the Breslau clinic of Professor Strümpell on "Pericolitis." Bittorf referred to the interesting fact that this condition was recognized by Virchow as early as 1853 and discussed in his work on the "Study of Abdominal Affections." He called attention to the occurrence of adhesive circumscribed peritonitis about the colon especially at the hepatic and splenic flexures, and the sigmoid, and expressed the view that they resulted from fecal stagnation.

I believe that all of these men are writing on different phases of the same subject. The different conceptions are well represented by the following examples:

1. Lane's chronic constipation with, as he believes, adhesions about the colon resulting from mechanical causes necessitating, he thinks, the removal of the colon or an anastomosis between the ileum and the sigmoid.

2. Wilms' mobile cecum, which he believes causes attacks simulating appendicitis and which he would cure by anchoring the too mobile cecum.

3. Jackson's membranous pericolitis, which he believes produces colic and obstruction and which can be cured by the removal of the membrane and the freeing of the intestines.

4. Fischler's dilatation and atony of the cecum, which he thinks can be handled by proper diet, massage, exercise and management of the bowels.

5. Blake's voluminous cecum, which he suggests might be cured by reefing it to normal size.

6. Payr's peculiar form of chronic obstruction of the colon at the splenic flexure.

7. Klemm's chronic appendicitis without acute attacks.

8. Haberer's chronic adhesive appendicitis.

9. Gerster's colitis and pericolitis, and many reports which find their way into the literature of chronic con-

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Lauenstein: Arch. f. klin. Surg. (Langenbeck's), 1893, xlv, 121.
2. Riedel: Arch. f. klin. Chir., 1894, xlvii, 153.
3. Payr: Arch. f. klin. Chir., lxxvii, 671.
5. Lane. Chronic Constipation; a Consideration of Its Surgical Treatment, Surg., Gynec. and Obst., New York, 1908, vi, 116.
6. Klemm: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1906, xvi, 580.
7. Harberer: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1908, xviii, 169.
8. Wilms: Deutsch. med. Wchnschr., No. 41.
9. Jackson: Surg., Gynec. and Obst., New York, 1909, ix, 278.
10. Fischler: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1909, xx, 663.
11. Stierlin: Deutsch. Ztschr. f. Chir., 1910, cvi, 407.
12. Gerster: Ann. Surg., September, 1911.
13. Blake: Ann. Surg., 1912, p. 767.
14. Bittorf: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1909, xx, 150.

stipation associated with auto-intoxication, hysteria, neuroses, etc.

The facts which must be analyzed in this multiform condition are the following:

1. Chronic constipation.
2. Dilatation and atony of the colon, especially of the cecum.
3. Enlargement and displacement and movability of the colon, especially of the cecum, both congenital and acquired.
4. Colitis from fecal stagnation.
5. Pericolitis with formation of adhesions and so-called membranes.
6. Obstructive symptoms due to these adhesions with resulting (a) colics and (b) ileus.

Before attempting to draw a picture of this symptom-complex, it is, I believe, necessary to point out and eliminate from this discussion two great mistakes which have been introduced. The first is Lane's conception of chronic constipation, its causes and results and surgical management, and the second is Wilms' mobile cecum as a cause of serious symptoms demanding surgical interference. Lane's teaching that chronic constipation alone frequently requires radical surgical treatment, such as the removal of the entire colon or an ileocolostomy, cannot be too severely condemned. We should always demand definite evidence of adhesions and obstructive symptoms in addition to mere constipation before resorting to dangerous operative measures. Lane's conception that the assumption by man of the erect position and the mechanical factors, such as the dragging of the loaded intestines on their mesenteries, are responsible for the adhesions which he finds about the colon is, I believe, wrong and should not be accepted. When the adhesions exist they are the result of a pericolitis. Lane has developed an admirable technic for the removal of the colon, but the trouble with his work and teaching is that he advocates and practices the removal of the colon for habitual constipation alone. We cannot accept these views. We must demand for such serious surgical operations absolute definite evidence of organic obstruction.

As to Wilms' mobile cecum, it will be interesting for you to read, if you have not done so, Wilms' original article and you will find that there is no further basis for mobile cecum than the fact that it occurred to Wilms as an idea which might explain the failures to cure some cases which he had operated on for chronic appendicitis. Many of the patients were neurotics (38 per cent.), and he noted that in some of the failures to cure the operation had been very easy technically, the appendix easily brought into view at the end of a very movable cecum and easily brought out of the wound. In thinking over the subject it occurred to him that the very movability of the cecum might be the cause of the symptoms, and he decided to anchor it in place and see the result. He then for a considerable series of cases with symptoms of chronic appendicitis, not only removed the appendix, but anchored the cecum, and reported most perfect cures just as our gynecologic brethren sometimes do after anchoring the uterus by some special method, or as our surgical colleagues do in reporting some special operation for movable kidney.

As a matter of fact, there is no reason to suppose that the mere movability of the cecum can of itself alone give rise to trouble any more than can a normal ileum or normal sigmoid, both of which are much more movable than the so-called mobile cecum. The trouble is that here and there all over the world credulous surgeons and gynecologists have accepted without question Lane's views and Wilms' views, and are removing colons and stitching up supposed mobile cecums to the great detriment of their patients. Let us therefore in the beginning of this discussion wipe off the slate of legitimate surgical procedures Lane's operations for chronic constipation and Wilms' anchoring of a movable cecum. There remains, however, a real pathologic entity to discuss. The condition presents itself in two distinct forms, a minor and a major, or a medical and a surgical variety.

First, the medical variety, without obstructive symptoms, is the condition of chronic constipation with colitis and dilatation and atony of the cecum. These cases lack the severe symptoms of colic and ileus of the obstructive variety; they are seen by the dozen by the experienced practitioner, and are best handled by exercise, massage, proper diet, cathartics and enemas. These cases are simply the cases of inveterate constipation, usually in women, which as a rule are badly managed and often cured by exercise, abdominal massage and proper diet. In addition to the ordinary picture of constipation with occasional attacks of colitis our new authors have found that in many of these cases the cecum is dilated, filled with gas, gurgles under pressure, feels like an air cushion on palpation, does not empty itself readily, is atonic, dilated and displaced. The *x*-ray will normally show bismuth in the cecum six hours after it has been swallowed. As a rule the cecum empties itself of the bismuth within twenty-four hours.

An enormous amount of work—and some very excellent work—has been done lately showing the position and size of the colon and cecum by means of the bismuth intake and the *x*-ray. We have still, however, much to learn in this field, and many of the conclusions which have been drawn from such *x*-ray evidence are not warranted. For instance, we cannot say that, because in a given case the cecum does not empty itself in twenty-four hours but requires thirty-six hours to empty itself completely, the condition is pathologic and requires correction by surgical interference. Nor can one say that because a cecum seems larger and lies lower in the abdomen that it is dilated and displaced, and requires reefing and anchoring in position. The medical phase of this condition is the old picture of chronic constipation with the added facts of Fischler's dilatation and atony of the cecum. If, under a mistake of diagnosis, one of these cases should be explored through an abdominal incision and nothing found except a pouchy, low-lying cecum without at any place an obstruction due to bands and adhesions and no other discoverable cause, the operation should be made purely exploratory and the abdomen closed without any interference, unless it is to remove the appendix. The patient can then, after the exploratory operation which simply made a definite diagnosis, be cured by proper medical management.

The surgical type of this condition is a very different matter. Here we have the following sequence of events: constipation, colitis, pericolitis, adhesions, colics, obstruction. These are the cases reported by Crede and Lauenstein as chronic colic due to adhesions, by Payr as obstruction at the splenic flexure due to adhesions, by Jackson as membranous pericolitis, by Gerster as colitis and pericolitis. These are the cases in which radical surgical measures, such as removal of bands and membranes, anastomoses and resections, are not only warranted, but are demanded and are often curative. The

picture here is the same as in the medical type, plus a pericolitis with the formation of bands and membranes which produce partial obstruction with colics, or more complete obstruction with colics and partial or even complete ileus. There are especially four locations at which these membranes and adhesions are found: (1) about the cecum and appendix; (2) at the hepatic flexure; (3) at the splenic flexure and (4) about the sigmoid. These cases of pericolitis are not as a rule correctly diagnosed. The cases about the cecum and appendix are almost always thought to be appendix attacks unless the appendix, as often happens, has been removed at a previous operation, and then the correct diagnosis may suggest itself. The cases of adhesion at the hepatic flexure are often thought to be gall-bladder attacks. The adhesions at the splenic flexure which are more frequently reported than any other variety may be mistaken for stomach attacks, and the cases of obstruction about the sigmoid often closely simulate carcinoma with obstructive symptoms.

I think that with the light that has been thrown on the subject lately we shall in the future make correct diagnoses more often. I was very much impressed, in seeing a case of this kind recently with Gerster, with the fact that a thorough understanding of the subject made the diagnosis much easier. We saw a young woman who had had a previous attack of appendicitis and the appendix had been removed. She had what appeared like an appendix attack with almost complete ileus, very little temperature, pain, tenderness, a dilated cecum which at times stiffened in its efforts to empty itself. Before operating, Gerster drew a diagram on paper of what I would find, i. e., a fan-shaped mass of adhesions producing obstruction at the hepatic flexure with the cecum and ascending colon covered with a veil of adhesions, the so-called Jackson's membrane. On opening the abdominal cavity I found exactly what he had drawn, with the colon distal to the adhesions collapsed. After division of the adhesions, the collapsed colon ballooned up with gas. The woman's bowels moved and the obstruction was temporarily relieved. It is evidently a case, however, in which an anastomosis must be made later, as the obstructive symptoms returned.

These cases of pericolitis are, I believe, not very uncommon. We must to-day know this fact and have a clear conception of the condition so that we can recognize it by its symptoms before operation, and by the gross findings met with at the operation. These cases of pericolitis with obstruction are dealt with best (1) by dividing the adhesions and removing the so-called membranes; (2) by side-tracking the obstructed section by a colocolostomy, by a colosigmoidostopy, by an ileocolostomy, rarely by a resection of the colon or artificial anus. This whole subject is as yet too new to permit definite valuation of the various measures advocated. We might adopt tentatively the following scheme:

1 In the minor cases in which the adhesions are limited and it seems probable that we can obtain permanent relief in this way, simply divide the adhesion and protect by normal peritoneum the raw surfaces so as to prevent their reforming.

2. When the cecum and ascending colon are involved extensively, make a lateral anastomosis between the ileum and the transverse colon.

3. When the obstruction is at the splenic flexure, make an anastomosis between the transverse and descending colon or between the transverse colon and the sigmoid.

4. When the obstruction is in the sigmoid, usually make a resection of the sigmoid and union by lateral anastomosis. But an anchoring of the cecum because it is movable, or a resection of the entire colon for constipation, *never!*

In the name of modern, scientific surgery do not let us here in America repeat the mistakes in this new field that have been made so often in the past. Think of the thousands of women who have been operated on unnecessarily for retroposition of a normal uterus, because it was tilted a little further backward than seemed fashionable; think of the many unnecessary operations we have made for slightly movable kidney; think of the hundreds of gastro-enterostomies which have been made without any fair reason, without any pathologic findings and without any benefit to the patient. Let us in cultivating this new field demand, as we now do for a uterus fixation, for a kidney fixation, for a gastro-enterostomy, a definite, tangible, gross pathologic condition which clearly demands it before we submit our patient to serious surgical operations. Reject, then, such bogies as the mobile cecum and operations for anchoring it in place. Reject operations based on *x*-ray indications, because some bismuth lingered a little longer in the cecum than in the opinion of some *x*-ray operator it should. Reject the surgical treatment for chronic constipation without organic obstruction.

And in the place of this nonsense, let us recognize and investigate and cultivate with great care the large group of cases of pericolitis which really do exist, which can be recognized by properly interpreting their symptoms, which are due to gross, pathologic conditions and which can be relieved by proper surgical measures.

122 South Michigan Avenue.

THE RESULTS OF OPERATIONS, ESPECIALLY ABDOMINAL, PERFORMED ON THE PRINCIPLE OF ANOCI-ASSOCIATION *

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It is the purpose of this paper to restate the principle of anoci-association as applied to surgical operations, to describe its application, and to present the results of operations by this method as compared with an equal number of operations performed by other methods.

My argument assumes that physical action and emotional activity are only expressions of motor stimulation; it assumes that there are in every active animal and in man stores of energy which when released are expressed in motion or emotion; that when these stores of energy are consumed fatigue or exhaustion is produced. The stored energy of the body may be discharged by physical injury of sensitive parts of the body, by emotional excitation or by physical exertion.

It is of highest importance to know that inhalation anesthesia does not prevent injury impulses from reaching the brain-cells and making them discharge their nervous energy, thus causing exhaustion or shock.

Under nitrous oxid anesthesia animals require approximately three times as much trauma to produce an equal amount of shock and equal physical changes in the brain-cells as under ether. What is the cause of these changes

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in the brain-cells and the exhaustion following injury under inhalation anesthesia? Does inhalation anesthesia act on all parts of the brain alike? If inhalation anesthetics acted on all parts of the brain alike, then the function of all the brain-cells would be suspended—that is to say, the patient would be dead. Under inhalation anesthesia, therefore, a part—I may say the greater part—of the brain is awake—not only awake, but responds to injury just the same as if no anesthetic had been given—that is, the same as if the patient were entirely awake. What kind of response do these awake cells make to the physical injury of operation? They make an effort to escape from the injury; they are trying to get off the operating-table and escape from the surgeon.

The above statements are based on the following observations: During a surgical operation there is, in response to every incision, every pull of the retractors—*indeed to every physical contact*—a change in the pulse, the respiration and the blood-pressure. These changes are a part of a physical act—an effort to escape from the injury. This is further shown by the fact that, if the anesthesia is light and the operator is rough, the patient moves purposelessly on the operating-table; but if the anesthesia is still lighter, the patient makes a physical defense of self-protection just the same as if there were no anesthesia and as if he were not on an operating-table. It is this that leads to the exhaustion of the operation and the physical changes in the brain-cells. The entire so called subjective mind is unanesthetized, though held in bondage, and may be punished in the course of operation.

Let us take still another point of view: Suppose that instead of the usual inhalation anesthesia, we give our patients curare and artificial respiration by intratracheal insufflation. Such patients would be even more quiet than under ether or nitrous oxid; there would be absolute muscular relaxation and absolute death-like quiet during the operation; but while curare completely paralyzes the muscular system, it leaves the mind perfectly clear and the sense of pain normally keen. What would be the effect on a human being if a prolonged surgical operation were performed under curare? What would be the state of the nervous system of such a patient and what would he say to his surgeon when finally he emerged from the muscle-paralyzing influence of the curare and had regained the power of speech? This is precisely the predicament of the subjective mind in our every-day operation. It is as completely unprotected under ether as the brain under curare, and suffers just the same. It has been shown that animals first placed under ether, then subjected to trauma succumb to shock-producing trauma as readily as under curare and morphin.

With these facts we can now understand by what influence a strong robust patient who enters the operating-room in the full tide of health an hour later may emerge broken and beaten and shattered, requiring months, perhaps years, to recover fully. It is for the same reason that the same man, if run down by a railway train and mangled, is shattered and broken; or if he has passed through a horrible experience, such as having a cold pistol pressed against his forehead in the night by a highwayman, or if he has been a witness of a murder, or if he has been subjected to any of the nerve-shattering stimuli of life. These and all of these are motor stimuli and whether they impair or whether they break the nervous system they are, except for the memory, just the same as surgical operations under ether.

There is an interesting fact concerning the state of the patient just before the operation. If the patient is in grave doubt as to whether or not he can survive the operation; if there is entire lack of confidence in the hospital or the surgeon, the patient has what in physiology is known as a low threshold to stimuli. And if he goes under the anesthetic in this state, the effect of any physical injury will be augmented and throughout the entire anesthesia the evidence of fear in the respiration and the pulse and in the way in which he reacts to the anesthetic is manifested. These patients take the operation very poorly. It is as if the patient went under the operation with his motor set at high speed and accordingly the energy of the body is consumed the more rapidly; hence, the greater the exhaustion or shock.

Can these injurious results be obviated? Yes, if worry and fear are excluded and if the field of operation is temporarily disconnected from the brain by the use of local anesthesia. Then no matter how severe, how extensive, or how prolonged the physical injury in the zone of operation thus blocked, no exhaustion follows and no brain-cell changes are seen.

In the body there have been implanted innumerable nerve receptors for the purpose of effecting an adaptation to environment; some of these receptors, such as those assisting in acquiring food, may be designated "beneceptors," while other receptors, having as their function the protection against harmful or nocuous contacts, are "nociceptors." The nociceptors are not distributed over every part of the body equally, but are most numerous in those parts most frequently subjected to injury. Hence we find in the skin that the nociceptors are most numerous in those parts coming most in contact with the outer world, that is, the hands and feet; the back, being less exposed, has fewer nociceptors. In the deep, interior and protected parts there are few nociceptors.

In the brain, which through all time has been protected with a skull, no nociceptors at all are found. The brain has no pain sense; one may probe the brain of an awake patient at will without even his knowledge. It therefore happens that the effect of an operation in this or that portion of the body is dependent on the phylogenetic or ancestral exposure, hence on the number of nociceptors the part contains. Physical injury of any sensitive part, that is, any part having nociceptors, causes a discharge of nervous energy leading ultimately to exhaustion. This discharge of nervous energy is not prevented by inhalation anesthesia. This exhaustion is due to driving the motor mechanism. With equal facility may exhaustion be produced by perceptions through the special senses such as seeing or hearing danger The human motor mechanism may be driven by a physical-contact stimulation of the nociceptors implanted within the body, or it may be driven by perceptions through the special senses. Whatever the cause may be, the stimulus is always through the awakening of associative memory; that is, all action is on the law of association through memory — phylogenetic association.

Harmful or nocuous associations are called "noci-associations." If then an operation be so planned that all harmful or nocuous associations are prevented, this state is designated "anoci-association," that is to say, "without noci-association." Practically applied it means that a surgical operation performed on this principle must be so conducted that there is excluded from the brain all noci-associations. This may be accomplished as follows: The surgeon must have so thoroughly prepared himself for his work and so controlled his surgical surroundings that he can truthfully say to his patient that his operation will be distinctly safer than his disease,

that the operation will be so conducted as to be devoid of either painful or dramatic incident, and that he will have no unpleasant experience to reflect on afterward. The patient should be given much personal consideration by the surgeon himself; if no contra-indication exists the patient should be given the benefit of a preliminary dose of morphin, or morphin and scopolamin; the management of a patient up to the point of anesthesia should be by only those nurses, orderlies and physicians who are humanitarian psychologists; the anesthetist should be even more of a psychologist, and preferably a woman, for somehow the world has an instinctive confidence in the ultimate good intentions of woman as compared with those of man. Who can say how much difference there is in the effect on a patient about to undergo a serious operation, between looking into the face of a virile young intern as compared with the faith-inspiring face of a Florence Nightingale? Anoci-association may further be promoted by the use of pleasant nitrous oxid instead of the irritating, suffocating ether, provided only that the anesthetist is an expert in this anesthetic. Then when under anesthesia, the brain may be entirely isolated from the field of operation by as careful and as complete infiltration into the latter of a solution of 1:400 novocain as if no general anesthesia had been given, and during the operation a special consideration of accuracy and gentleness should be observed. In this manner an operation, however extensive, may be performed without materially driving the motor mechanism—hence, without consuming nervous energy.

At the close of the operation, if the zone of operation is cut off for a considerable time from communication with the brain by an injection of quinin and urea hydrochlorid, after-pains and postoperative nerve-exhausting stimulation are avoided.

What does this accomplish? In abdominal operations under anoci-association and nitrous oxid there is complete relaxation. This relaxation is so marked that most operations require no abdominal pads and the closure of even upper-abdomen incisions becomes most simple. In no operation under anoci-association does one expect to find the pulse-rate at the close of the operation faster than when in bed the day before. This is strikingly illustrated in operations in Graves' disease, in which for the first time the pulse at the end of the operation is no faster than when the patient was in bed the day before. It almost wholly prevents gas-pains; there is but little nausea or vomiting. The patient is at once awake and in full possession of his senses. Unlike ether, there is no depression of the immune forces of the body; the patient, being strong, is able to take up his full share of the battle of convalescence. The care of the nurse is much simplified; the convalescence shortened; reoperation is not dreaded; there are fewer painful scars; the pulse, temperature and respiration show less postoperative changes, about 90 per cent. of the patients have no especially unpleasant memories of the day of their operation. The mortality rate, especially in abdominal operations, in my experience has been more than cut in two. Anoci-association takes from surgery most of its proverbial harshness, and on this principle we can now actually perform shockless operations.

Osborn Building.

ABSTRACT OF DISCUSSION

DR. JOSEPH C. BLOODGOOD, Baltimore: Many years ago Dr. Crile published his extensive laboratory experiments on the factors in shock and their cause and prevention. Later he continued to give us the results of his accumulating clinical observations. We owe, therefore, Dr. Crile a debt of gratitude and I am sure that many of us have not familiarized ourselves with his published writings. This knowledge, therefore, is accessible to all of you, and I take this opportunity to emphasize that you should become familiar with the details of his technic. You will find this knowledge of great value in your daily operative work. The chief difficulty is that surgeons will not appreciate the difference in the ordinary case and in the ordinary operation. Its greatest value is in the handicapped patient. The experimental work and the clinical observations of Crile have led him to understand and appreciate the factors of shock, the psychical factors which begin the moment operation is suggested, the factor due to anesthesia, that due to hemorrhage, and that due to the trauma of the operation itself. It was his appreciation of these factors that led him to the development of his technic which has for its object the prevention of shock, or the reduction of the shock to the least degree.

To achieve this in the most effective way, the technic must be adopted for all cases and in every operation, no matter how trivial. If employed only for handicapped cases one will never master the perfection of technic. To attain this perfection and to appreciate the difference in the results, you must look on every individual who is to be subjected to surgical treatment as a handicapped one, and the details of the technic must begin from the moment that an operation is suggested. Nitrous-oxid-and-oxygen anesthesia, although in the majority of cases best for the patient, makes the work of the surgeon in many operations more difficult. The technic of blocking sensory impulses by infiltration with 1:400 novocain is difficult to master. I am confident from my own experience that with the knowledge that Crile has given us of the factors of shock and with the employment of his technic, our operative mortality will be reduced, postoperative complications will be lessened, and the period of disability shortened. Briefly, therefore, surgical operations will become distinctly less of an ordeal. Furthermore, these results will have a tendency to lengthen the life of the surgeon. Mortality, postoperative complications and discomforts are the chief wear and tear in the work of the modern surgeon. Hours spent in the most arduous labors in the atmosphere of such results are less fatiguing than minutes with the old results. Crile has demonstrated that the modern surgeon must be as much, or more, a physiologist, than an anatomist. The recognition, prevention and treatment of shock is one of the most, if not the most, important problem in surgery to-day.

DR. JAMES H. FORD, Indianapolis: I represent a different class of surgeons from the one that these men do. I am the surgical head of an organization which employs from 40,000 to 50,000 men in extra hazardous work. These men are injured frequently, and the shock from the injury is of sufficient magnitude to cause the surgeon considerable worry, to say nothing of its effect on the outcome of the case. Pain is the realization of irritation. If at the instance of the trauma the afferent impulses to the nerve could be obliterated, there would not be any shock perceptible. We cannot carry out in our service the technic outlined by Dr. Crile, but we can come very close to doing so and we carry it out as far as we can. We instruct all of our medical men that the moment the trauma is inflicted they should administer to the patient some narcotic. No matter what they may have on hand, morphin or anything else, the nerves should be blocked so that shock impulses may not travel over them. We have to do our surgery on the ground, or on the tile floor, at best, and we have learned by much observation and personal experience with severe cases of crushing injury that this procedure of blocking the nerve-paths by means of a narcotic plays a very considerable rôle in effecting a speedy recovery of the patient. That brings us back to the aphorism of the old surgeons, who said that opium was the sheet-anchor of surgery. It blocks the nerve-paths so that shock impulses cannot reach the brain and the element of fear is also removed.

DR. G. W. CRILE, Cleveland: Dr. Bloodgood has written more in detail and much more practically than I have attempted to do. I have received much inspiration from what he said.

DILATATION OF THE DUODENUM IN RELATION TO SURGERY OF THE STOMACH AND COLON *

JOSEPH C. BLOODGOOD, M.D.
BALTIMORE

This presentation is but a preliminary report, because at the present time the material is sufficient only for a short presentation.

In my experience dilatation of the duodenum may be divided into the following three groups:

1. Dilatation associated with acute dilatation of the stomach—gastromesenteric ileus. This condition is often met with during the acute stage of, or in the convalescence from, a number of grave conditions, chiefly infections such as typhoid fever, pneumonia, acute inflammatory rheumatism. It is also a very common postoperative complication. The best treatment in this group is with the stomach-tube, but under certain conditions operative relief may become imperative. On this form of dilatation of the duodenum much has been published.[1] I have nothing new to add here, except in regard to operative relief.

2. Chronic dilatation of the duodenum. In my first report[2] I think I was one of the first to call attention to chronic gastromesenteric ileus. At that time I suggested the possibility of an anastomosis between the duodenum and jejunum. Since then Stavely has reported a successful case,

Since January, 1911, in an experience with twenty cases of resection of the colon I have observed in five instances great dilatation of the duodenum. The constriction at the root of the mesentery is due to a pull on the mesentery by the dilated cecum displaced into the pelvis. This cecum cannot produce such tension on the mesentery of the small intestine unless the last portion of the ileum near the cecum has an unusually short mesentery. I shall dwell on this point later. Clinically, in these patients gastric symptoms predominate, with vomiting and gastric residuum containing bile and duodenal contents. The duodenal dilatation and its cause were demonstrated without question. These patients have been relieved after the resection of the right half of the colon. Up to this time I was unfamiliar with this possible explanation of the cause of chronic dilatation of the duodenum and have not found it mentioned in the literature. Undoubtedly others have observed the same conditions, and if a later search of the literature brings this out, it can be used as confirming evidence. As these patients also suffer from constipation, it is my opinion that resection of the colon will relieve their symptoms better than anastomosis between duodenum and jejunum.

3. Dilatation of the duodenum after resection of the stomach, with gastro-enterostomy of some kind. In these cases the gastric end of the duodenum, of course, is closed. If any obstruction takes place at the gastro-enterostomy preventing the contents of the duodenum entering the stomach or passing on into the jejunum, the patient will exhibit symptoms of shock or toxemia with tachycardia and anuria, and die within a few days. I have observed but two cases, but I am inclined to the opinion that some of the deaths reported in the literature as of postoperative shock, or anuria, or dilatation of the stomach were really due to dilatation of the duodenum closed at both ends. Draper Maury was one of the first to call attention to this physiologic death after his experimental work on animals.

In the first two conditions there is complete or temporary relief from washing out the stomach, because the duodenum closed completely or incompletely at its jejunal end still can empty into the stomach, and this material can be washed out with the stomach-tube. In the third type, however, gastric lavage will not have any effect whatever. This condition must be prevented, if possible, in the technic of the gastrectomy; in those cases in which prevention is unsuccessful, the condition, if recognized early enough, may be relieved by temporary drainage of the duodenum.

I shall attempt to illustrate these three types of duodenal dilatation by cases which have been under my own observation, and describe a little more in detail the essential features which are of practical importance in diagnosis and treatment.

GROUP I. DILATATION OF THE DUODENUM WITH ACUTE DILATATION OF THE STOMACH

In my only observation in which this lesion was not postoperative the dilatation of the duodenum extended to the mesenteric vessels.[3] The dilatation in this case occurred during the convalescence from acute inflammatory rheumatism. I saw the patient three and one-half days after the onset of vomiting. The stomach-tube had not been employed. Gastric lavage at that time brought away more than a liter of dark brown fluid. This color is characteristic of duodenal contents. I was able to inspect the pathology of the lesion both at operation and autopsy. To-day, with my increasing experience, I would attempt to relieve this patient by repeated employment of the stomach-tube and would not subject the patient to operation so quickly. In the literature numerous cases of this type are reported. If gastric lavage is employed repeatedly from the onset of the first symptom, recovery usually takes place.

Postoperative dilatation of the stomach is a much more common occurrence. In the majority of cases the fluid removed by lavage is brownish in color and contains bile, demonstrating that the pylorus is patent, that the duodenal contents pass into the stomach and that the obstruction is lower than the pylorus. I have seen but one autopsy on a patient dead of postoperative acute dilatation of the stomach. This case has been previously reported.[4] Here also the obstruction was at the root of the mesentery between the duodenum and jejunum.

In my experience most cases of dilatation of the stomach following operation are relieved by gastric lavage. This treatment must begin early and be repeated at frequent intervals until the stomach remains empty and the castor oil given through the stomach-tube passes and moves the bowels. In the diagnosis and treatment of this postoperative dilatation of the stomach one should not wait for symptoms, like vomiting, to indicate gastric lavage. In some cases, in which experience has taught us to expect this complication the stomach-tube should be passed within twelve hours after operation and this repeated until it is found that the stomach is empty. This routine procedure will prevent the dilatation becoming excessive and, I am confident, will shorten the period of dilatation. If a stomach after operation is allowed to become very much overdistended, it takes longer for the muscle tone to return.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

1. Bloodgood: Ann. Surg., 1907, xlvi, 736.
2. Bloodgood: Ann. Surg., ibid., p. 744 (Case 3).
3. Bloodgood: Ann. Surg., November, 1907 (Figs. 1 and 2).
4. Bloodgood: Ann. Surg., November, 1907 (Figs. 3 and 4)

The dilatation should always be expected in patients operated on for intestinal obstruction. I employ the stomach-tube as a routine twelve hours after operations on the stomach, whether it be a gastrectomy, a gastro-enterostomy, or a Finney pyloroplasty. Retention of gastric secretion is not always present after these operations, but I am confident that this routine procedure prevents it in some, and makes it less distressing in others. In other cases, again, the indications for the passage of the stomach-tube are epigastric distress and distention in the epigastrium, with increased rapidity of the pulse. Do not wait for vomiting. It is often a late symptom and in many cases present when there is no dilatation. In this type of acute dilatation of the stomach, whether it follow operation or not, the duodenal contents are emptied into the stomach, and if they are removed at frequent intervals with the tube, the toxic symptoms are reduced, or do not appear at all.

The question arises, How long shall we continue the lavage? It is my rule after each lavage to leave some castor oil in the stomach after the washings have become clear. Now, if the bowels do not move, and we continue to find residuum in the stomach of a brown color and stained with bile, we know that the obstruction is not relieving itself. The question now naturally arises, how long shall we wait before attempting to relieve this by operation, and if we operate, what are we to do?

Case 1.—In my first experience the patient had been subjected to a Finney pyloroplasty for a pyloric stenosis due to a duodenal ulcer. Gastromesenteric ileus followed the operation with symptoms similar to the case which I have previously reported.[4] In this case, however, the toxic symptoms were very slight, because of the frequent gastric lavage, but the bowels did not move. On the sixth day I performed a posterior gastro-enterostomy. The duodenum was obstructed up to the root of the mesentery, the jejunum and the remainder of the small intestines, collapsed. There was no ptosis of the colon and no obstruction from adhesions. This operation relieved the patient at once.

The second case is even of greater interest. Apparently the etiologic factor was different, the treatment differed and the result was even more astonishing.

Case 2.—This patient, a woman, aged 27, on May 3, 1912, was operated on at St. Agnes Hospital by Dr. Calihan, the resident surgeon. There had been local symptoms of acute appendicitis for seven days. On the fifth day—forty-eight hours before operation—symptoms suggesting perforation and peritoneal infection set in.

On admission to the hospital there was every sign of general peritonitis. The patient was also critically ill—temperature 103 F., pulse 128, blood-pressure 100, leukocytes 24,000. Dr. Calihan under gas anesthesia removed the appendix through a right McBurney incision. The appendix had very thick walls demonstrating that the inflammatory process had been of some duration, and in the center over a concretion there was a large, ragged perforation. He drained through this incision and a second suprapubic incision. The peritoneal cavity and the pelvis were filled with pus and fibrin. It is interesting to note that during the nitrous-oxid-and-oxygen anesthesia the blood-pressure rose to 125 and then fell gradually to 90; the pulse rose to 140.

There was no evidence of dilatation of the stomach before operation. Forty-eight hours after operation the stomach contained 400 c.c.; seventy-two hours 1,600 c.c.; on the fourth day 2,100 c.c.; on the sixth day 900 to 400 c.c.; but the urine was increasing in quantity, and the bowels had moved from the first twenty-four hours. This evidence shows that in spite of the dilatation of the stomach something was passing into the small intestines. The stomach later on held duodenal contents, indicating that the obstruction was in the duodenum, probably secondary dilatation, because the first washings were distinctly gastric. By the eighth day the stomach-tube showed no gastric residuum. The urine had increased, the bowels moved, and the patient was in very much better condition.

On the eleventh day, after three days without symptoms and after twenty-four hours of constipation in spite of enemas there was a recurrence of the symptoms. Repeated lavage for forty-eight hours brought away about every six or eight hours from 800 to 1,000 c.c. This material was always stained with duodenal contents and contained bile. The amount of urine fell to less than 200 c.c in twenty-four hours. In spite of castor oil per tube and enemas no gas or fecal material passed the rectum. The abdominal distention was very slight. The patient's leukocytes were 20,000; the blood-pressure 98. The patient did not complain much of pain, except epigastric distress before lavage. She was cyanotic and looked toxic. It was my opinion that something had to be done for her relief. Non-operative measures had failed. I was inclined to the view that the pelvic peritonitis had partially obstructed a loop in the pelvis. This had produced the second attack of acute dilatation of the stomach. But I did not foresee the other factor which was revealed at operation.

The patient was placed on the operating-table. A slightly distended loop of intestine seen and felt in the right wound was opened. It proved to be cecum, because it contained peptonized milk which had been given per rectum, and salt solution stained with methylene-blue per rectum appeared in two minutes. This demonstrated a free colon. An incision was made in the middle line above the suprapubic draining sinus, and the peritoneal cavity opened. There was exposed the omentum plastered to the lower abdomen pulling the greater curvature of the stomach down to a position 3 cm. below the umbilicus. This omentum was separated and the stomach pushed back into position. There was no general peritonitis. The loops of intestine were then separated from the pelvis. The adhesions were not extensive. There was a distinct kink at a distance of 3 feet from the cecum. The bowel below was rather collapsed, with patches of adhesions; above it was slightly distended, but the peritoneum was clean. The most remarkable finding, however, were a number of pus pockets (about six). They resembled somewhat a small bird's egg from which the shell had been removed. The outer wall consisted of fibrin, of a yellowish white color; the central cavity was filled with yellowish pus. These abscesses could be picked from their positions in the peritoneal cavity, and whether adherent to the peritoneum of the mesentery or of the small intestine, the peritoneum looked normal after the removal of the pus pockets. One of these was situated between the jejunum as it passed through the mesentery and the mesocolon at its root. Whether this was the cause of the obstruction producing gastroduodenal dilatation, I do not know. I handled the small intestines from beginning to end, replaced them, sutured the ileum, just above the point of the kink, to the peritoneum of the middle wound with three rows of silk sutures, introduced a small catheter into the ileum and fixed it with silk; placed the remaining lower portion of the ileum in the pelvis, drained the pelvis below the enterostomy with gauze and rubber tissue and fixed a small tube in the cecum. The patient before operation was given intravenously 1 mg. of strophanthin and during operation salt solution intravenously also. Her blood-pressure at the end of the operation was 88; the pulse fell from 110 to 60; the respirations had increased from 20 to 32. The stomach was washed out and castor oil left in.

After operation the patient said she felt more comfortable. In twelve hours there were still 500 c.c. in the stomach. Salt solution was given subcutaneously every eight hours. In forty-eight hours the gastric contents had fallen to 300 c.c. The enterostomy began to drain; the urine increased to 900 c.c. in twenty-four hours. It is now nine days since the second operation; there has been no further dilatation of the stomach; the enterostomy is working perfectly; the patient is taking soft diet, and there is every appearance of recovery.[5]

Later I hope to be able to present more in detail the indications for operation in acute gastroduodenal dilata-

5. July 4, 1912: The patient is well.

tion, whether postoperative or not, when non-operative measures fail to give relief. At the present time it may be stated that when gastric lavage continues to demonstrate large quantities of residuum in the stomach with duodenal contents, when nothing passes per rectum, and when the secretion of the kidneys gets gradually less, operation is indicated. What the surgeon should do depends on what he finds. These patients should be anesthetized only with nitrous oxid and oxygen. Although my experience so far with strophanthin is limited, I feel that this drug will be helpful in maintaining the blood-pressure during the operation. The patients should also get large quantities of water intravenously or subcutaneously.

GROUP II. CHRONIC DILATATION OF THE DUODENUM

In August, 1906, I first recognized this condition at an exploratory operation. This case has been previously reported.[6]

CASE 3.—(Pathol. No. 7,442.)—Mrs. R., aged 42, had chronic dilatation of the duodenum (gastromesenteric ileus). The following symptoms continued for two years, after an attack of mumps: intermittent attacks of pain with nausea and vomiting; between attacks indigestion, belching and constipation; for five weeks alternating constipation and diarrhea; loss of weight; emaciation. Examination revealed a movable, palpable mass above the umbilicus, suggesting gastric cancer or ulcer. This proved to be the pancreas which, with the duodenum, could be pulled out of the wound. The duodenum was huge, dilated; the pylorus large, the stomach slightly dilated and in moderate ptosis; the small intestines were ribbon-like. The wound was closed. The symptoms not relieved; the patient continued to vomit, the material containing duodenal contents and bile; now and then the bowels moved. The urine was scanty. Death took place suddenly twenty-seven days after the operation, with very rapid pulse and the picture of toxemia, but no fever. The autopsy findings were identical with those at operation.

At that time I had had very little experience with ptosis of the colon and I made no note on the condition of the colon. My operative experience with ptosis of the colon and of the stomach began in January, 1911. The first case was a typical example of ptosis of the stomach with obstruction from a pyloric kink and ptosis of the colon. This patient has been relieved after resection of the stomach with a Kocher anastomosis and resection of the right half of the colon. The second case, in April, was an example of ptosis of the right half of the colon with a fairly normal stomach. This patient was very much relieved after resection of the right half of the colon. In the third case (May 29, 1911) I demonstrated for the first time the relation of duodenal dilatation of the chronic gastromesenteric-ileus type to ptosis of the colon, and relieved this patient completely by resection of a portion of the ileum and the right half of the colon.

Up to the present time I have had five such cases. In four only the colon and a piece of the ileum were resected. In one case part of the stomach was also resected because of its great dilatation and displacement. This patient and three of the four patients having resections of the colon have been completely relieved of all their symptoms. One patient who became pregnant after the operation is not yet fully relieved.

In all of these cases the pathologic condition found at operation was almost uniform. The most impressive feature is a hugely dilated cecum situated in the pelvis. The mesentery of the portion of the ileum near the cecum is short, and one can demonstrate at the operation the pull of the cecum on the mesentery of the small intestine—a straight pull producing more or less constriction on the duodenum by the mesenteric vessels at the root of the mesentery. When the mesentery of the ileum is long the redundant cecum cannot produce this pull. In all of these cases the duodenum was dilated up to the mesentery, notwithstanding long preoperative treatment by restricted diet and gastric lavage.

The distended cecum in the pelvis, the short mesentery of the ileum near the cecum, the demonstrable pull on the mesentery, the dilated duodenum appeared to be the essential pathologic features.

In all of these five cases the symptoms previous to operation, which varied from four months to four years, were chiefly gastric and consisted of vomiting. When the patients remained in bed, as a rule the gastric symptoms subsided or disappeared. This, however, is not always so. It was absent in my first case reported here and in a recent one seen in consultation with a colleague. But in two of the five cases subjected to operation, the patients were comfortable when quiet in bed. Three patients, although not free from symptoms when in bed, were less uncomfortable. These five patients were losing weight, were unable to eat solid food; even with restricted liquid diet, there was nausea and vomiting when they were up and about. The gastric material always contained bile and duodenal contents. The gastric residuum varied. In all of the cases, when the patients first came under observation, the stomach-tube demonstrated retention from 200 to 500 c.c. In four of the cases this residuum disappeared after rest in bed, restricted diet and lavage. The chemistry of the gastric secretion varied: in four cases hypo-acidity, in one slight hyperacidity. In all of the cases constipation was a marked feature.

The previous history varied. In three cases the long history suggested a congenital enteroptosis. Two cases were associated with pregnancy and infections following labor. Two patients had been previously operated on elsewhere: one cholecystostomy, one suspension of kidney, liver and stomach.

The investigation of this group is by no means completed, but I have sufficient evidence to suggest that duodenal dilatation may be secondary to ptosis of the colon, especially in those cases in which the ileum near the cecum has a short mesentery. In these cases, after a history of constipation and other symptoms associated with ptosis of the colon, gastric symptoms supervene. In my experience these patients are relieved by resection of the right half of the colon, followed by an ileocolostomy. In one of my cases in which the stomach was so very large, I performed a resection with a Kocher anastomosis.

About six months ago a colleague had under his care an unmarried woman with a previous history suggesting enteroptosis. In the last six months gastric symptoms supervened. The clinical picture was almost identical with my first case observed in August, 1906. Vomiting and gastric stagnation were such prominent symptoms that the surgeon was of the opinion that there was pyloric stenosis. A Finney pyloroplasty was performed. He noted the great dilatation of the duodenum and the ptosis of the colon. The symptoms were not relieved. On some days after the operation nothing passed into the small intestine, and the urine became very scanty. During these periods gastric lavage revealed 1 to 2 liters of material. There was present in this material bile and duodenal contents. Then there were intervals of temporary relief when the bowels moved and the urine increased in quantity. The patient finally died of exhaustion in about two weeks.

6. Ann. Surg., 1907, xlvi, 745 (Fig. 6).

These two cases demonstrate that duodenal dilatation of the chronic gastromesenteric-ileus type may be fatal if not relieved by the proper operative measure. After my first report Stavely[7] of Washington in 1910 performed duodenojejunostomy for chronic gastromesenteric ileus. The patient was absolutely relieved. Stavely calls attention to the fact that Barker[8] suggested this operation before the publication of my paper. But when I observed my first case (August, 1906) I unfortunately had not seen Barker's paper. Codman[9] in his paper on chronic obstruction of the duodenum at the root of the mesentery writes, "Bloodgood is the only one whom I have read who has devoted one sentence to the chronic condition. Doubtless others whom I have not read have spoken of it."

In these two types—acute and chronic gastromesenteric ileus—usually associated with some dilatation of the stomach, the danger of the physiologic death from obstruction of the duodenum is lessened, because the pylorus is patent, the duodenal contents can pass into the stomach and be removed by the stomach-tube. J. W. Draper Maury[10] was apparently the first to call attention to the physiologic death from obstruction of the duodenum. His conclusions are based on experiments on animals.

The practical point that I wish to bring out and emphasize is that in the acute and chronic condition, if the patients are not relieved by gastric lavage, if observations demonstrate that little or nothing passes into the intestine, if the urine becomes scanty, that is, when nonoperative measures have failed, something should be attempted by operative interference. In the chronic cases the problem seems to be less difficult. In my experience, if on opening the abdomen the duodenal obstruction can be demonstrated to be due to a prolapsed cecum pulling on the mesentery of the small intestine, then the right half of the colon should be resected, as this operation would relieve the ptosis as well as the duodenal obstruction. If this cause—ptosis of the colon—is not obvious, the operation first performed by Stavely—duodenojejunostomy—is indicated.

In acute cases in which the cause of the duodenal obstruction is ptosis with pull on the mesentery, the patients may be too ill for resection of the colon. Then duodenojejunostomy is indicated, unless there is some other cause removable by a simple procedure, as in the first case reported here. In my second case gastroenterostomy relieved the condition.

In a second paper I shall attempt to discuss this question more in detail. I have, however, emphasized here, and, as far as I know, for the first time in the literature, the relation between ptosis of the colon and chronic gastromesenteric ileus, and have shown by five successful cases that both can be relieved by resection of the ptotic colon.

GROUP III. DILATATION OF THE DUODENUM AFTER RESECTION OF THE STOMACH

My attention to this as a probable cause of death after gastrectomy was attracted by the experimental work of Maury[10] in April, 1909.

I could imagine that after a gastro-enterostomy because of pyloric stenosis, acute duodenal dilatation might take place. A kink at the anastomosis would prevent the escape of the contents of the duodenum into the stomach, and the stricture at the pylorus would block the other outlet. I have never observed this condition. After gastrectomy, however, when the pyloric end of the duodenum is closed and some form of gastro-enterostomy is performed, there is opportunity for this condition to develop, if any kink or spur prevented the duodenum emptying itself either into the stomach or into the intestine through the anastomosis. In such a case lavage of the stomach would be of no avail. One would be suspicious of the condition by the absence of duodenal contents or bile in the gastric washings.

CASE 4.—(Pathol. No. 10,069.)—This patient had a huge cancer on an old ulcer at the pyloric end of the stomach. The stomach was adherent to the pancreas. To get the diseased tissue away I had to resect a large portion of the stomach. The pancreas had to be drained as it was injured. A Kocher anastomosis was impossible without too much tension, and the drainage also interfered with this method. I therefore performed a posterior gastro-enterostomy under great difficulties, because of the high position of the stomach. This patient died five days and twelve hours after operation. The operation did not produce shock. The first characteristic feature was intense abdominal pain, then increasing rapidity of the pulse, subnormal temperature with two rises, and increasing delirium. There was no vomiting or hiccup. In spite of large quantities of water administered subcutaneously, the amount of urine voided progressively diminished. Gastric lavage brought away very little from the stomach, and the material contained no duodenal contents or bile.

On account of the delirium, pain, tachycardia and no temperature I was of the opinion that the patient had a pancreatitis, but as I had placed a drain to meet this complication I saw no further indication for intervention. I believe now, however, that I should have recognized the true nature of the complication in forty-eight hours and explored, when I would have found and relieved the dilatation of the duodenum either by introducing a tube for temporary drainage, or relieving the obstruction at the gastro-enterostomy.

CASE 5.—(Pathol. No. 12,101.)—Operation Oct. 19, 1911. Gastrectomy for a very large indurated ulcer involving the pylorus and over half of the stomach. The indurated mass was so much like cancer that I felt that resection should be performed. It was not adherent. There was no difficulty in the resection, but the remaining portion of the stomach was very small. For this reason I decided not to risk the ordinary gastro-enterostomy, but to perform a modified Roux. I divided the jejunum, sutured one end (the lower) to the posterior wall of the stomach after the method of Kocher, and the upper end to this loop at about 6 cm. from the stomach. (I had had an experience recently with an anastomosis of this kind which had worked unusually well.) The autopsy in this case showed that I sutured the upper end laterally into the lower loop too far to the left, so that when it dropped into place it twisted the lower loop on its longitudinal axis and produced a kink.

This patient died about five days after operation, with symptoms very much like those in the other case: the same increasing rapidity of pulse with subnormal temperature at the end of forty-eight hours; after that the temperature rising with the pulse. The postoperative notes on this case made by Dr. Calihan are very complete. Eight hours after the operation: The patient was in good condition. The stomach-tube removed 50 c.c. of blood-stained fluid. Twenty-four hours after operation there was a stool and the abdomen was soft and not distended; no vomiting. Thirty hours: For the first time tachycardia was noted; gastric lavage brought out 200 c.c.; no duodenal contents or bile. Forty hours: No vomiting; still rapid pulse; beginning distention in the right upper quadrant which later proved to be the dilated duodenum; the urine scanty. Fifty-four hours: Vomiting for the first time; lavage 400 c.c.; pulse still rapid; patient comfortable after lavage; the distention is still present in the right upper quadrant. Sixty-four hours: The patient is in collapse with a very rapid pulse and complains of pain in the right upper quadrant; the remainder of the abdomen is soft and scaphoid. Seventy-three

7. Stavely: Surg., Gynec. and Obst., 1910, xi, 288.
8. Barker: Bull. Johns Hopkins Hosp., January, 1906.
9. Codman: Boston Med. and Surg. Jour., April 16, 1908, p. 503.
10. Maury, J. W. D.: Am. Jour. Med. Sc., May, 1909.

hours: Slight improvement after subcutaneous and intravenous salt; only 50 c.c. of urine in the last twelve hours; the patient has a rapid pulse (140); the extremities are cold; the skin cyanotic; the palpable mass in the right upper quadrant is larger. Eighty hours: Dr. Calihan explored the palpable mass and placed a tube in the hugely dilated duodenum which was the size of the patient's arm. Twenty-four hours after the duodenostomy: The patient except for anuria is better; there is no further gastric retention; the duodenum is draining and something has passed per rectum, but the kidneys have secreted only 125 c.c. in twenty-four hours. Thirty-six hours after the duodenostomy: The patient is in coma; there is no gastric residuum, the bowels have moved, the pulse-rate has improved, but in spite of all treatment the total amount of urine is but 170 c.c. The patient died in coma forty-eight hours after the duodenostomy.

The drainage of the dilated duodenum eighty hours or a little over three days after the operation was followed by improvement of everything, except kidney function. The gastro-enterostomy was apparently working, because there was no gastric residuum and the bowels had moved, but the kidneys apparently had been too profoundly affected by the toxemia to regain their function.

I believe we have here two examples of physiologic death from acute obstruction of the duodenum. I think in the future such cases may be recognized earlier and the condition relieved by immediate operation. It is a complication that must be borne in mind when some form of posterior gastro-enterostomy is made after gastrectomy. It is the fear of this complication that influences me to employ Kocher's method whenever possible. Undoubtedly the technic of the anastomosis in these two cases was faulty, but I have had a large experience and in both cases I had time to perform the anastomosis in the best way under the unfavorable conditions. Perhaps an anterior gastro-enterostomy in such cases would be preferable.

As far as I have gone into the literature, the deaths after gastrectomy and posterior gastro-enterostomy have not been sufficiently investigated to exclude this possibility, especially in those cases which have succumbed within the first five days without symptoms of peritonitis and in which at autopsy, if any, no peritonitis was found. The condition of the duodenum has not been critically examined. The cause of death has been given as vicious circle, shock, anuria. We should become suspicious of this condition when gastric lavage does not relieve the symptoms and does not bring forth bile and duodenal contents. In addition, these patients show an unexplained tachycardia, increasing delirium, marked anuria. The palpation of the duodenal distention may be late. It was not noted in the first case, although it might have been present; it was observed in the second case at least forty-eight hours after operation. Perhaps if we look for it carefully we shall observe it earlier.

This preliminary report has for its object to direct attention to the practical importance of these three types of duodenal dilatation. I have not discussed duodenal dilatation with high obstruction, except in the history report of the one case relieved by operation.

Johns Hopkins Hospital.

ABSTRACT OF DISCUSSION

DR. JOHN W. DRAPER, New York: It is gratifying to see the results of experimental work beginning to be applied to clinical surgery. I wish to call the attention of this Section to the fact, which I think can be considered a law, viz., that dilatation does not occur in any organ, except at the point of obstruction. I have never been able to produce dilatation of the stomach by simulating gastromesenteric ileus. This certainly is true in animals. Therefore, I believe that no dilatation occurs through mechanical causes except at the point of obstruction. Dilatation remote from the point of obstruction is due to chemical disturbances. I am still convinced that the cause of death is a toxemia, despite the interesting studies which have just been presented. It is almost unbelievable that an animal could be dehydrated in the short period of thirty-six to forty-eight hours. Many animals on which obstruction of the duodenum had been produced died in this time. They pass a nearly normal amount of urine and dehydration cannot be the underlying cause of death. The second point is that when the autopsy is done on these animals it is impossible to find, so far as ordinary examination goes, any lesion except a universal dilatation of the capillaries of all the organs, more marked in the colon and small intestines. Dr. George Wallace has called attention to the fact that the condition is strikingly like that of death following the toxemia of diphtheria. He has also noted that much experimental work has been done to show that hydration of the tissues always lengthens life in any toxemia.

I want to report two more studies on the glycuronic function of the liver in intestinal obstruction. They show that the liver is undoubtedly involved functionally, its morphology remaining normal. Furthermore, the recent studies which we made at the New York University show a very pronounced lowering of the blood-pressure. This has also been observed by Dr. Whipple. The reaction to epinephrin suggests that the disturbance is a central rather than a peripheral one.

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THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

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[For other information see second page following reading matter]

SATURDAY, JULY 13, 1912

THE FUSION OF NERVES

The phenomena of degeneration in peripheral nerves after section or injury and their regeneration when the severed portions are united by suture have not only awakened activity along experimental lines, but also stimulated the surgeon to attempt, with success, the practical application of nerve reunion in neurologic procedure. The old idea that if the severed ends of the nerves were brought together carefully by sutures they might unite by first intention without degeneration in the peripheral stump has long since been given up. Degeneration is inevitable when the living continuity of the fibers has once been interrupted in any way; and the general features of the regenerative processes leading to a final functional continuity are familiar in text-book descriptions, although some of the vital details are still subject to controversial discussion. The technic of the process consists in bringing the nerve-stumps into accurate juxtaposition. A peculiar and characteristic scar consisting of proliferated cells and nuclei originating from the neurilemma forms at the place of interruption. After a time a distinct swelling sometimes referred to as a neuroma forms. The scar becomes organized, blood-vessels entering it from the neighboring perineuria. New nerve fibers are laid down in the interstices of the cells in every direction, owing to the mechanical conditions. But as the cells in the scar later gradually diminish, there comes a time when the new fibers tend to rearrange themselves into their original conformation and relationships.

The idea derived from this picture of nerve regeneration, in which it has been emphasized that the mechanical conditions imposed by the scar of nerve suture are sufficient to bring about marked changes for the time being in the anatomic nerve pattern at that point, has led Dr. Feiss, of the Laboratory of Experimental Medicine at Western Reserve University in Cleveland, to attempt a new mode of union.[1] When nerves are crushed and tied together with an absorbable ligature he finds that they actually grow together and may become one structure anatomically and physiologically. Not only may such nerves reassume their original function, but they may also take on increased function as induced by the new and different combinations which are brought about by the union. The conditions in the scar occasioned by the ligature and injury cause fibers to pass permanently from the fascicles of one nerve into those of another. Feiss has termed the result "nerve-fusion."

To obtain the crossing of fibers within the scar and thus the establishment of new neural connections a good proliferation of cells leading to an abundant distortion of the regenerating fibers must be secured. This can be accomplished by having the scar not too short. Feiss believes that the results obtained by suture are neither more nor less than the effects of conditions superinduced by scar. No matter how skilfully suturing is carried out, the final arrangement of the new nerve-fibers must depend on the mechanical conditions necessitated by the mass of proliferated cells which forms at the divided nerve-ends. This mass may prevent the cut ends of the nerves from remaining in accurate apposition so as to enable fibers to pass directly from one fascicle to another.

The advantages of the fusion method, according to Feiss, are in its physical possibilities. The experimentalist is enabled to carry out procedures not to be thought of by the method of suture. The union of nerves in their continuity, the anastomosing of nerves of most diminutive size, and the distortion of the nerve pattern of single fascicles, all become feats of technical simplicity.

1. Feiss, H. O.: The Fusion of Nerves, Quart. Jour. Exper. Med., 1912, v, 1.

DIAGNOSIS OF PANCREATIC TRAUMA AND LESIONS

Because of the importance of early recognition of injury of the pancreas, due to the fact that necrosis so quickly follows, great interest is attached to the work of Wohlgemuth and Y. Noguchi,[1] who appear to have demonstrated a simple method of determination of such injury within a few hours after it is sustained, and without the performance of exploratory laparotomy which has always been in disfavor. Wohlgemuth has shown that resection of a portion of the pancreas is followed by an increase of diastase in the blood and urine, which occurs also on blocking of the pancreatic ducts. It was then natural to suppose that following a trauma of the pancreas, when secretion would be available for absorption, more diastase would be found in the blood. The method is as follows: Five cubic centimeters of the patient's blood are defibrinated and centrifuged and the serum removed. In ten tubes are placed decreasing quantities of serum, in the first tube 1 c.c. and in each of the following tubes one-half the quantity in the preceding tube. To each tube are added 2 c.c. of a 0.1 per cent. starch solution and all are placed in a water-bath at 40 C. for thirty minutes. They are then cooled and to each is added drop by drop a 1/50 normal iodin solution until the color no longer disappears when iodin is added,

1. Wohlgemuth and Noguchi: Berl. klin. Wchnschr., 1912, xlix, 1069. Abst. 95, p. 151, this issue.

but remains a distinct blue. One is thus enabled to measure comparatively the limit of starch digestion, and thereby to estimate the quantity of starch which would be reduced by 1 c.c. of serum. This gives an index which marks the amount of diastase present. In examination of over 150 persons by this method a normal index of between 8 and 32 was found for the blood and between 16 and 32 for the urine.

The results of observations on experimental pancreatic lesions are very interesting. In one case the pancreas of a dog was cut squarely across; all hemorrhage was stopped, and the dog examined immediately on recovery from anesthesia. The diastase in the blood increased hourly; after four hours it doubled in amount; and after twenty-four and forty-eight hours, respectively, the amount was ten and twenty times as great as at the beginning. The diastase in the urine followed a similar course, passing from 0 before the operation to 8 one hour afterward and 16 two hours later, the increase continuing. In a second case the pancreas was merely stabbed with a small scalpel and the surrounding area pinched lightly together with the fingers. There was only a slight amount of hemorrhage and a small hematoma formed immediately. Here also there was continued increase in the diastase of the blood, but to a smaller extent and at a relatively slower rate. The increase of diastase in the urine ran parallel.

As to the application of these results to man, the authors state that the reaction is quicker, but the index in man is smaller than in the dog. In two cases in which the pancreas was injured slightly in the course of operations on the liver and intestines, an increase in diastase was found after twenty-four hours.

It would seem, then, that we have here a means of determining quickly that a pancreatic trauma has been sustained; furthermore, that the amount and rate of increase of diastase may be expected to throw light on the extent of the injury. The method must be given wide trial in a large number of cases under a variety of conditions before the final limits of its practical usefulness can be determined.

SUPPORT OF STATE LICENSING BOARDS

The provision in most of our states requiring that the expenses of examining boards shall be paid out of fees received from candidates is clearly wrong in principle. If the board thoroughly does its duty and establishes a strict safeguard between the public and incompetent practitioners of medicine, the number of candidates at its examinations may be diminished and the income of the board correspondingly reduced. On the other hand, an unscrupulous board may take advantage of the income from fees and establish short cuts or easy markings, in order to induce candidates to take their examinations and thereby to increase the board's income. The rather loose methods of administering reciprocity prevailing at present tend to encourage such methods. A state having reciprocal relations with a large number of other states, by making its own requirements easy, might license a considerable number of incompetents, who, after receiving their licenses, would be transferred to other states through reciprocity. A better provision for meeting the legitimate expenses of the licensing board would be through a definite state appropriation, and if the board is to be in position to safeguard carefully the interests of the public against incompetent physicians, this appropriation should be generous.

The new practice act recently secured in Pennsylvania is encouraging in that it has wisely provided an annual fund of $30,000 to cover the expenses of its new board, the Bureau of Medical Education and Licensure. In marked contrast to this generous action, we are astonished to note that in Minnesota, notwithstanding the very excellent work which has been carried on by the licensing board of that state, some carping critics have found fault because, besides the very reasonable amount expended for running the office and keeping the records, that board paid on an average to each member as a per diem and for traveling and other expenses the very extravagant sum of $245 each year! And this was to cover all expenses for four different examinations of four days each! Yet even with this ridiculously low pay it is worthy of note that the Minnesota board is one of the five or six in this country which have adopted, to any considerable extent, practical laboratory and clinical tests in the examination of those who seek to practice medicine, thus making it more possible to protect the people of that state from uneducated medical men. Instead of criticizing the apparently very reasonable expenditures of that board, it would be in better grace for those representing the people of that state to show their appreciation of the good work being done by securing for their licensing board a generous annual appropriation to provide for its expenses.

The licensing board in every state should be so financed and be given such unhampered authority that it would not only be in position to license to practice those who are found to be properly qualified, but also to prosecute the unlicensed, the medical fakers, the criminal abortionists and others who, posing as "doctors," are defrauding and swindling the public. Medical license would be in far better condition in this country if in this way all states would make ample provision for their licensing boards.

THE PLACE OF MUSHROOMS IN THE DIET

In advance of the usual crop of fatal cases of mushroom poisoning which regularly follows the opening of the summer season it may be worth while to offer some comments on the reputed nutritive value of the edible fungi. How little the judgment of the inexpert may be depended on to determine the distinction between the delicious nutritive mushroom or its dangerous and toxic

inedible companion may best be emphasized by the fact that there are in this country undoubtedly more than one hundred edible species. The popular distinction between mushroom and toadstool is one of name alone, for many of the supposedly inferior specimens have proved on careful dietetic examination to be harmless to the organism, whereas some of the fungi which bear an extremely close family resemblance to favored articles of diet are the carriers of danger in the form of exceedingly powerful poisons. Let him, therefore, who lacks the training requisite for the unfailing detection and identification of species carefully refrain from excursions into a field of uncertainty so fraught with danger.

As a rule mushrooms are eaten much as are most of our ordinary "green vegetables," without any assumption of extraordinary nutritive value. In some quarters, however, the opinion has gained ground that mushrooms constitute an unusually nutritious and sustaining diet. A well-known botanist has publicly intimated that mushrooms may contain from 20 to 50 per cent. of protein material in their dry matter and suggests that such material might properly be called vegetable meat and used as a substitute for animal food. It is even suggested that a hearty meal on mushrooms alone would be about as reasonable as a dinner on nothing but beefsteak and might be expected to be followed by similar ill consequences. The underlying fact on which such conclusions are based is the actual presence of nitrogenous material in this plant tissue. Many chemists have in the past made the now unjustifiable error of ascribing to nitrogen in food material a value equal to that of an equivalent amount of protein. We know today, however, that there are many forms of nitrogenous compounds existing in both animal and plant tissues, which are non-protein in character. This applies, for example, to the so-called extractives of meat and the amids of plants, all of which certainly play no rôle in nutrition at all comparable with that taken by the proteins proper. The fact, therefore, that the chemist in his analysis finds nitrogen to be present in an edible material no longer justifies him in converting the results of his analysis into terms of proteins without a more refined consideration of the presence of these indispensable foodstuffs.

Mushrooms offer an instance of the foods in which a not inconsiderable proportion of the nitrogenous materials present exists in forms other than those of the readily available proteins. This was shown some time ago in the studies of Mendel[1] on the edible American fungi. He points out that the familiar edible mushrooms contain very large quantities of nitrogenous carbohydrates which resist digestive changes and are, therefore, not available to the organism; and the fact is emphasized that while the edible fungi may properly be regarded as dietetic accessories, they ought by no means to be ranked with the essential foods. Referring to the comparison of the mushrooms with beefsteak, for example, it can readily be shown that an individual would be obliged to consume several kilograms of fresh morels to obtain a day's requirement of protein which is easily satisfied in the form of beefsteak. More recent studies by Reuter[2] have shown that the mushrooms contain large quantities of nitrogenous material comparable with chitin, which is familiar as the protective covering of the lobster. Such material is proverbially indigestible. It is interesting to note that these vegetable forms thus represent a transition, as it were, between the lower animal and plant forms. In addition to the chitin there are present various nitrogenous compounds such as guanin, adenin, hypoxanthin, cholin, trimethylamin and numerous others in free form. Such chemical compounds are readily converted by autolytic or bacterial changes into toxic bases and the question may well be raised whether the toxicity occasionally observed after the ingestion of reputably edible fungi may not be due to the formation of this class of compounds. The more we learn of the mushrooms, regarding the palatability of which we have no objection to record, the more it becomes apparent that they are scarcely different as regards dietary virtues from the general run of the green vegetables which have never achieved the distinction of any unique or superior nutritive properties. They belong rather to that large group of food materials which we consume for reasons quite apart from the yield of calories which they have to offer to the organism.

1. Mendel, L. B.: The Chemical Composition and Nutritive Value of Some Edible American Fungi, Am. Jour. Physiol., 1898, 1, 225.

2. Reuter: Beiträge zur Kenntniss der stickstoffhaltigen Bestandteile der Pilze, Ztschr. f. physiol. Chem., 1912, lxxviii, 167.

Current Comment

LEPROSY IN THE UNITED STATES

A survey of the prevalence of leprosy[1] in the United States and its possessions was recently made by the U. S. Public Health Service. Health officers of the several states, Porto Rico, Hawaii and the Philippines were requested to submit a statement of the number of new cases reported in 1911, and of the total number on Jan. 1, 1912. The results were not complete, because in only eighteen states and the District of Columbia is leprosy a specifically notifiable disease. In all, 146 cases were reported in the United States, of which forty were new cases having been first observed in 1911. In 1911 a commission of officers of the Public Health Service found 278 lepers in the United States. Of these, 145 were foreign-born, and thirteen were of unknown nativity; 186 were reported as probably having contracted the disease in this country. Only seventy-two of the patients were isolated and cared for by the local authorities. The 146 cases reported in the present survey do not indicate a decreased prevalence. Rather these 146 cases reported by health authorities are comparable to the seventy-two cases of patients cared for by health officials in 1901.

1. Pub. Health Rep., June 14, 1912.

Three states—California, Louisiana and Massachusetts—have specific provision for lepers in leprosariums. In other states varying degrees of care and isolation are provided. There are known to be twenty-eight lepers in Porto Rico. In Hawaii and the Philippines the disease constitutes an important public health problem. In the Philippines about 6,000 lepers have been transferred to Culion. Cebu, an island with one-tenth of the Philippines' population, furnished one-half of the cases. On this island many instances indicate that leprosy is a so-called house disease. The Treasury Department recently amended the interstate quarantine regulations to the effect that common carriers may not transport a leper except under specified restrictions, and a special permit from the Surgeon-General of the Public Health and Marine-Hospital Service. A leper who violates this regulation is to be returned to the original state or to a designated federal quarantine station.

TYPHUS AND DIPHTHERIA IN NEW YORK

The New York City Department of Health in its May bulletin[1] presents some data of particular interest regarding epidemic contagious diseases in that city. The recent studies of Anderson and Goldberger[2] and the discussion engendered by them have brought a practical unanimity of opinion in the medical profession of New York that "Brill's disease" is in reality a mild form of typhus fever.[3] It is recommended therefore that the use of the name "Brill's disease" be discontinued, even while full recognition is accorded to the persistent study and accuracy of observation of Dr. Nathan E. Brill. Dr. Brill strongly suspected the true nature of the disease which by common consent bore his name, although it was left for others to furnish positive proof of the identity of "Brill's disease" and mild non-epidemic typhus. Typhus fever is a reportable disease in New York and the Health Department will take such measures for its suppression as are indicated by the recently discovered facts regarding its transmission. The medical profession at large and public health authorities must take cognizance of the fact that typhus fever, even though of a mild type, is now endemic in several cities of the United States. The disease has never been very prevalent on the American continent. In 1847 small epidemics were introduced into Canada by immigrants. In New York City, epidemics were noted in 1867-8, 1881-2 and 1892-3. Philadelphia was visited in 1883. Typhus appeared in Cuba and Mexico in 1906, and is still found in Mexico. In the New York epidemic of 1881-2, there were 810 cases with 225 deaths in Manhattan, and eleven cases with four deaths in Brooklyn. In 1892, 707 cases developed in Manhattan with 245 deaths. The strictly localized nature of this outbreak in a small number of lodging and tenement houses speaks strongly in support of the theory that the body louse is the responsible agent of transmission.[4] This theory receives additional confirmation from the importance of social conditions in the development of typhus. Overcrowding, alcoholism, privation and insanitary surroundings are predisposing factors. Another matter of interest recorded in the report is that the year 1911 showed a lower incidence of diphtheria in New York than in any year since 1902, and the lowest recorded number of deaths from this disease. Before 1895, when diphtheria antitoxin was introduced, the death-rate for this disease averaged over 14 per 10,000 population; the total was from 2,000 to 3,000 a year. In 1911 the death-rate was only 2.7 and the total number of deaths 801. The decrease in morbidity and mortality is ascribed chiefly to the introduction of diphtheria antitoxin.

1. Monthly Bull., Dept. Health, City of N. Y., May, 1912.
2. Anderson and Goldberger: U. S. Pub. Health Rep., Feb. 2, 1912.
3. American Typhus and Body Lice, THE JOURNAL A. M. A., April 20, 1912, p. 1108.
4. Anderson and Goldberger: U. S. Pub. Health Rep., March 12, 1912.

ENLIGHTENED SELFISHNESS

Under this title, the Philadelphia *North American* discusses the work of the Equitable Life Assurance Society for the conservation of life and health. After commenting on the loss of 1,600 human beings in the wreck of the *Titanic* and contrasting this loss with the certain loss of 9,000 lives every year in Philadelphia through preventable diseases, the *North American* says: "The business of the Equitable Life Assurance Society is to insure lives. Higher death-rate means loss of revenue and reduction of profits. So, with enlightened selfishness, the Equitable is endeavoring to stimulate interest in the problems of health and sanitation. The Equitable wants people to avoid illness and to enjoy length of days. With the Equitable, it isn't merely a humane interest. It is strictly business. To the Equitable, saving lives means saving money, and yet this is not any more true of a life-insurance society than it is of the community. Every life has a money value to society. A definite economic loss is suffered every time an individual, who might have been saved, dies. A city is rated according to the number of its citizens willing and able to make a living. . . . The enlightened selfishness of powerful financial interests like the Equitable is a hopeful sign. . . . There is no influence that holds out more hope for progress than enlightened selfishness." The *North American* is right. It is the economic appeal of the health conservation movement which is encouraging. Purely moral causes win support slowly. But a cause which is both moral and economic cannot fail to win, as soon as these two facts are recognized.

INTERESTING FIGURES CONCERNING MENINGITIS

Notwithstanding the efforts of Shreveport, La., to keep out meningitis by establishing quarantine against the state of Texas, where a considerable epidemic of the disease occurred during the winter and spring, a number of cases occurred in that city and vicinity. Some interesting figures have been prepared by the city health officer concerning the disease. Since Dec. 4, 1911, 111 cases originated in the city and nineteen were imported, making the total number treated 130. Exclusive of imported cases, twenty-seven patients were white and eighty-four colored, eighty-four were males and forty-six females. Among the cases in the city there were sixty-nine recoveries and thirty-eight deaths, making the per-

centage of recoveries 65. Of the whites, twenty-three recovered, a percentage of 85. The disease occurred most frequently among negroes between the ages of 11 and 20. The greater number of cases and higher percentage of deaths among the colored population are probably accounted for by the difference in economic and hygienic conditions. The percentage of recoveries at Shreveport is a little better than the average in the Texas epidemic, the deaths in the latter state being between 40 and 60 per cent. In one city in Texas, where most cases occurred, the mortality in the city hospital under the serum treatment was 27 per cent., while among those treated outside of the hospital with and without the serum it was 60 per cent. In a few places the death-rate reached 85 per cent. The showing in favor of the hospital treatment combined with the serum is remarkably good, as compared with the ordinary management of these cases. But the death-rate for this disease, even under the vigorous action of the health authorities, with the use of the serum, is still high, and meningitis still remains one of the most fatal of epidemic diseases.

PARTY PLATFORMS AND NATIONAL HEALTH SERVICE

The framers of the platform of the Republican National Convention did not see fit to make any definite declaration on the subject of a national Bureau or Department of Health. For this omission there are two possible explanations: Either they did not consider the subject of sufficient importance to be worthy of mention, or they feared the antagonism of the interests and sects which, either through selfishness or ignorance, have opposed this measure. On the contrary, the framers of the platform for the Democratic party placed in it a strong and comprehensive endorsement of a national health service. The plank is a straightforward endorsement of the principles of the present Owen bill. It reads:

"We reaffirm our previous declarations advocating the union and strengthening of the various governmental agencies relating to pure foods, quarantine, vital statistics and human health. Thus united and administered without partiality to or discrimination against any school of medicine or system of healing, they would constitute a single health service, not subordinated to any commercial or financial interests, but devoted exclusively to the conservation of human life and efficiency. Moreover, this health service should cooperate with the health agencies of our various states and cities without interference with their prerogatives or with the freedom of individuals to employ such medical or hygienic aid as they may see fit."

There is nothing vague about this; it is concise and straightforward, with no attempt at ambiguity.

SANER CELEBRATION OF INDEPENDENCE DAY

According to immediate returns from this year's celebration of the Fourth of July, obtained by the Chicago *Tribune*, comparatively few deaths or injuries have resulted. Of course the figures are not complete, but they are sufficiently so for comparison with similar figures for last year. It will require several weeks before the final results — especially in cases of tetanus — can be known and their outcome recorded. We shall compile the statistics this year as usual and, while our system of gathering these ensures fairly complete returns, we shall be glad to receive reports from physicians of any deaths or injuries cared for by them or coming to their attention. Such cooperation will be appreciated and will make possible the publication of a more complete statement than would otherwise be the case. The publication of statistics showing the results of the old-time methods of celebration has doubtless done more than all other factors combined to arouse public sentiment against the wanton trifling with life and limb in this annual celebration. While it is true that the annual total of death and mutilation has been greatly reduced, let us not rest until the annual recurrence of senseless noise and destruction has been entirely done away with.

Medical News

ARKANSAS

New Officers.—The Medical Society of the Sixteenth Congressional District was organized at Dermott recently: president, Dr. W. A. Brown and secretary, Dr. Smith, both of Monticello. ——Howard County Medical Society at Nashville; president, Dr. T. F. Alfor, Murfreesboro; secretary-treasurer, Dr. E. C. Dilbert, Nashville.

New Dean for Medical Department.—Dr. Morgan Smith, Little Rock, secretary of the State Board of Health and last year president of the Arkansas Medical Society, was elected dean of the Medical Department of the University of Arkansas, June 26, vice Dr. J. H. Lenow who has been at the head of the medical school since its beginning in 1879.

CALIFORNIA

Personal.—Dr. Oliver D. Hamlin, Oakland, fractured his knee in a runaway accident in Chicago, June 16.——Dr. Marion Thrasher, San Francisco, who has been seriously ill with ptomain poisoning, is reported to be convalescing.——Dr. George H. Kress, Los Angeles, has sailed for Europe.——Dr. Nettie M. Stephens, Stanford University, has been awarded the $1,000 scholarship given by the Naples Table Association for the promotion of laboratory research by women.——Dr. C. F. Buckley, San Francisco, who has been seriously ill with pneumonia, is reported to be improving.

ILLINOIS

New Officers.—Lake County Medical Society, in Waukegan: president, Dr. H. B. Roberts, Highland Park; secretary-treasurer, Dr. W. C. Boughton, Waukegan.

Personal.—Dr. and Mrs. Louis Ostrom, Rock Island, are spending their vacation in Bermuda.——Dr. H. H. Rogers, Canton, has been reelected physician of Fulton County.

X-Ray Machine for Hospital.—An *x*-ray machine has been donated to St. Francis' Hospital, Evanston, by a lady of St. Mary's Parish who desires to remain anonymous. The apparatus cost $2,000.

Chicago

New Sanatorium.—Ground is to be broken this week for a sanatorium to be erected on the northwest side by the Jewish Consumptive Relief Society.

Gift to Hospital.—Charles Deering has acquired a tract of land on South State Street from Mrs. Bertha Honore Palmer which he intends to give to Wesley Hospital. The land has a frontage of 175 feet on the west side of State Street and 100 feet south of Twenty-Fourth Street. The hospital now owns 175 feet, and Mr. Deering 150 feet adjoining his present purchase. The hospital is said to have an option on the remaining 100 feet of frontage in the block, thus rendering it possible to acquire the entire 600 feet of frontage for hospital purposes.

INDIANA

Reward Offered for Murderer.—The special committee of the Nu Sigma Phi Sorority of Women Physicians of Indiana has collected about $3,000 to be given as a reward for the arrest and conviction of the murderer or murderers of the late Dr. Helene Knabe, Indianapolis.

Personal.—Dr. J. H. Powell, Loganspoit, has been elected president of the Cass County Historical Society.——Dr. Z. C. Wolfe, Indianapolis, was seriously burned by an explosion of gasoline at Corydon, June 3.——Dr. Severance Burrage was given a farewell dinner by the Tippecanoe County Medical Society at the LaFayette Club, June 3, at which Dr. George F. Keiper acted as chairman. Dr. Burrage has arranged to leave LaFayette for Indianapolis.——Dr. J. McLean Moulder, Kokomo, has accepted the position of superintendent of the Methodist Episcopal Hospital, Indianapolis.——Dr. L. B. Hill, Seymour, has been elected president of the Fourth District Medical Society.——Dr. J. W. Sluss has been appointed superintendent of the Indianapolis City Hospital, vice Dr. John L. Freeland, resigned.

IOWA

New Officers.—Dubuque County Medical Association, at Dubuque, June 26: president, Dr. W. L. Becker; secretary, Dr. M. J. Moes.

Personal.—Dr. Warren T. Peters, Burt, was seriously injured by the overturning of his automobile at Algona, June 21.——Dr. George P. Neal, Fort Madison, has been appointed county physician of Lee County.——Dr. D. S. Fairchild, Clinton, has been reelected editor of the official journal of the Iowa State Medical Society; Drs. J. W. Osborn, Des Moines, and C. A. Boice, Washington, have been elected assistant editors and Dr. Granville N. Ryan, Des Moines, has been elected chairman of the Board of Trustees of the Society.——Dr. Walter L. Bierring, Des Moines, who has been seriously ill with pneumonia, is reported to be improving.

MASSACHUSETTS

Correction.—In the news item entitled "Psychopathic Hospital Opens," in THE JOURNAL, July 6, page 44, the name of the director should be Dr. Elmer E. Southard.

State Society Meeting.—At the annual meeting of the Massachusetts Medical Society, June 11, the following officers were elected: president, Dr. Walter P. Bowers, Clinton; vice-president, Dr. Francis W. Goss, Roxbury; secretary, Dr. Walter L. Burrage, Boston; treasurer, Dr. Edward M. Buckingham, Boston, and librarian, Dr. Edward H. Brigham, Brookline. At the annual banquet, June 12, one thousand were present and Dr. George B. Shattuck, Boston, presided.

Hospital News.—The Boston Floating Hospital has gone into commission. During 1911 this institution treated 438 permanent patients and 800 day patients. The hospital appeals for a contribution of $22,000 to meet notes which mature in April of next year.——The New England Baptist Hospital, Roxbury, has opened an addition to its bungalow service. The new building has ten private rooms and a veranda ten feet wide extending its entire length.

Personal.—Dr. Arthur Isaac Kendall, Boston, has been placed in charge of the research work on tuberculosis in Northwestern University, the chair for which was recently endowed with $250,000 by James A. Patten, Evanston, Ill.——Drs. John Homans and David Cheever, Boston, have been appointed surgeons to the Peter Bent Brigham Hospital.——Dr. Samuel H. Durgin, chairman of the Boston Health Board, retired from office after forty years of service, June 10. His associates presented him, on his retirement, with a gold watch, chain and pencil, suitably inscribed. The former president of the Board of Aldermen also presented Dr. Durgin with a handsome traveling bag. Dr. Durgin sailed for Europe, June 11, and expects to spend a year in traveling abroad.——Dr. Loring B. Packard, resident surgeon of the Haymarket Square Relief Hospital, Boston, has resigned and has been made surgeon in chief of the Brockton Hospital.——Dr. Samuel A. Green, who has been ill in the Boston City Hospital for two months, is reported to be improving.

MICHIGAN

Personal.—Dr. and Mrs. George R. Pray, physician to the Michigan State Prison, Jackson, sailed for Europe, June 19.——Dr. Leon M. Gillette, formerly mayor of Battle Creek, is said to have been committed to the Kalamazoo State Hospital, June 6.——Dr. A. F. Kingsley, Battle Creek, has been elected secretary of the Calhoun Medical Society, vice Dr. Ray C. Stone.

MINNESOTA

Appropriation for Health Office.—The City Council of St. Paul has transferred $5,000 from the miscellaneous account of the general fund to the quarantine fund for the prevention of small-pox.

Personal.—Dr. O. O. Brietenbach has been elected president of the Frazee Commercial Club.——Lorin B. Ohlinger, superintendent of the State Sanatorium for Tuberculosis near Walker, has resigned.——Dr. George A. Geist, St. Paul, has been appointed bacteriologist of the State Board of Health.——Dr. Hibbert W. Hill, Minneapolis, epidemiologist of the State Board of Health, has resigned to accept the office of director of the Institute of Public Health of London, Ont., and to become a member of the faculty of the Medical Department of Western University.

NEBRASKA

Maternity Homes Licensed.—Acting under the new law regulating maternity homes, twenty-seven institutions had applied for and received licenses up to June 2. The application for license must show that the home is approved by the authorities of the city in which it is located. The homes are subject to inspection at any time and are under the supervision of the State Board of Health as to proper regulation.

Personal.—Dr. H. B. Cummins, Seward, has been reappointed a member of the Board of Secretaries of the State Board of Health.——Dr. W. W. Hedlund, Lincoln, has succeeded Dr. M. Gifford Welch, Haigler, resigned, as assistant physician to the State Penitentiary, Lincoln.——Dr. George Ewh, of Talmage, was thrown from his buggy while making a night call recently and fractured his leg.——Dr. Harold Gifford, Omaha, was given the honorary degree of Master of Arts by the University of Michigan, June 27.

NEW JERSEY

Personal.—A testimonial dinner was given at the Montclair Club, June 17, by the Associated Physicians of Montclair and vicinity, in honor of Drs. Henry B. Whitehorne, Verona, and W. H. White and Edward M. Ward, Bloomfield, all of whom have been in practice more than fifty years and served in the medical corps during the Civil War.——Dr. Thomas H. Mackenzie, retiring physician of the State Hospital, Trenton, was presented with a handsome Shrine jewel by the employees, July 1. Dr. Martin W. Reddan has succeeded Dr. Mackenzie.——Dr. and Mrs. J. Henry Clark, Newark, have gone abroad.

NEW YORK

New Officers.—Delaware County Medical Society, at Delhi, June 11: president, Dr. C. R. Wood, Hamden; secretary-treasurer, Dr. W. R. Tymeson, Franklin.

Unite to Teach Sex Hygiene.—The American Federation of Sex Hygiene was incorporated with the Secretary of State, on July 1, to operate throughout the country. Its purpose is the voluntary education of the public in the physiology and hygiene of sex, including the study and application of every means, educational, sanitary, moral and legislative, for the prevention of vice and its diseases. The principal office of the corporation will be located in New York City.

Additions to Faculty.—Syracuse University Medical School has made the following additions to its faculty: Dr. Leverett Dale Bristol, of St. Paul, Minn., assistant professor of bacteriology; Dr. Earl V. Sweet, Phoenix, N. Y., instructor in the department of histology; Dr. Albert G. Swift, New York City, instructor in surgery, and Dr. John W. Cox, instructor in pathology.——Colgate University has signified its intention of permitting the students to take the senior year in a registered medical college *in absentia*, such students to receive the bachelor's degree on the presentation of a certificate from the college of medicine attended, to the effect that the work has been done satisfactorily.

Alienists Meet.—On July 1, the State Insanity Commission met at the Manhattan State Hospital, Ward's Island, where testimony was presented showing the overcrowded condition of the insane hospitals in this state and confirming what is already well known, that this condition is chiefly due to the large percentage of foreigners in the state. There are more than 1,900 alien insane patients in the Manhattan State Hospital and few of these patients have taken out naturalization papers. These cost the state in ten years of their hospital life $3,400,000. There are in this hospital at present 4,720 patients, although the capacity of the institution is only 3,596. It was also stated that 50 per cent. of our native-born insane patients are the children of foreign parents. A convention of authorities on insanity from many states will be held in New York in the fall when it is proposed to make a report to the government on the New York conditions.

New York City

Off for Europe.—Among those who have recently sailed for Europe are the following: Drs. R. R. Lytle, George M. Swift and Dr. W. S. Renner, Dr. and Mrs. William Porter, Dr. and Mrs. A. M. Jacobus and Dr. and Mrs. Amos Canfield.

Kill Rats at Quarantine.—Under a new ruling all steamships arriving from ports infected with the bubonic plague must have rats exterminated before entering the Port of New York in order to prevent them from carrying germs ashore.

Field Hospital a Feature of the Fourth.—One of the features of the celebration of the sane Fourth of July in this city was the establishment of a field hospital with medical officers and nurses at City Hall, and the use of ambulances which accompanied the parade and were stationed at various places where celebrations were held.

Automobile Fatalities.—The National Highways Protective Society has issued its monthly report which shows that during the month of June there were fifty persons killed by vehicles and 275 seriously injured in the streets of New York City. During the month of June, 1911, there were 171 accidents and 12 persons killed by automobiles while this year there were 26 killed by automobiles; of those killed 20 were children under sixteen years of age.

Personal.—Dr. Simon Flexner has returned from Europe. ——Dr. Charles H. May and wife, Dr. J. S. K. Hall and wife, Dr. J. W. White and Dr. J. M. Griffin have sailed for Europe. ——Dr. Charles Baskerville, professor of chemistry and director of the laboratory at the College of the City of New York, has been awarded the Edward Longstreth Medal of Merit by the Franklin Institute of Philadelphia, for his investigations in the chemistry of anesthetics.——Dr. John Elmer Weeks was given the honorary degree of Doctor of Science by the University of Michigan, June 27.

NORTH CAROLINA

State Board Election.—The State Board of Medical Examiners at its meeting in Hendersonville, June 17, elected Dr. W. W. McKenzie, Salisbury, president, and Dr. B. K. Hayes, Oxford, secretary (reelected).

State Health Officers Hold Meeting.—The State Health Officers' Association held its annual meeting in Hendersonville, June 16, under the presidency of Dr. L. B. McBrayer, Asheville, and elected the following officers: Dr. L. N. Glenn, Gastonia, president; Dr. George M. Cooper, Clinton, vice-president, and secretary-treasurer, Dr. W. S. Rankin, Raleigh.

OHIO

Faculty Changes.—The following changes in the faculty of the Medical Department of Western Reserve University, Cleveland, are announced: Dr. Benjamin L. Millikin, professor of ophthalmology since 1893 and dean since 1900, has resigned both professorship and deanship, and has been made senior professor; Dr. George C. Ashmun, professor of hygiene and preventive medicine, from 1893 to 1909, professor of medical ethics since that time and secretary of the faculty from 1893 to 1907, has resigned and has been made senior professor; Dr. Carl A. Hamann, professor of anatomy from 1893 to 1911 and since that time professor of applied anatomy and clinical surgery, has been made dean; Dr. Charles E. Briggs has been made associate professor of surgery; Dr. W. E. Bruner, associate professor of ophthalmology; Dr. Henry J. Gerstenberger, associate professor of pediatrics; Dr. Howard D. Haskins, associate professor of organic chemistry and biochemistry; Dr. David Marine, assistant professor of experimental medicine, and Dr. Charles W. Stone, associate professor of nervous diseases.

PENNSYLVANIA

Health Officers Warned of Small-Pox.—Because of the presence of eleven cases of small-pox throughout the state (nine in Philadelphia) all traceable to the passengers of the steamer *Haverford*, Dr. Samuel G. Dixon, state health commissioner, has sent warnings to the health officers of the following places to which passengers had been ticketed: Allentown, Wilkes-Barre, Wiconisco, Harrisburg, Arnold, Alverton, Brownsville, Carnegie, Chester, Coatesville, Collingdale, Haverford, Homestead, Monessen, Norristown, Norwood, Parkesburg, Shenandoah, Cynwyd, Reading, Mocanaqua, Smoke Run, Chambersburg, Pittsburgh and Philadelphia. Examination will be made of all these passengers to insure the prompt reporting of cases.

Philadelphia

Personal.—Drs. Howard F. Hansell and W. W. Woodward and provost Edgar F. Smith of the University of Pennsylvania have sailed for Europe.

New Medical Dean at University.—It was announced, July 1, that Dr. William Pepper, son of a former provost of the university, had been appointed dean of the Medical Department of the University of Pennsylvania, to succeed Dr. Allen J. Smith, resigned. Dr. Allen Smith will still remain professor of pathology, comparative pathology and tropical medicine. Dr. Pepper has been a professor of clinical pathology at the university for five years.

Committee Urges More Nurses for Municipal Hospital.—The committee appointed by Dr. Joseph S. Neff and composed of Dr. W. M. L. Coplin, former director of the Department of Health and Charities; Marion E. Smith, supervising nurse of the hospital of the University of Pennsylvania, and Dr. J. William White, investigated the question of nursing at the Municipal Hospital for Contagious Diseases and found the number of nurses inadequate for the care of the patients. The committee suggests that the training school at the hospital for contagious diseases be combined with that of the Philadelphia General Hospital and that a course of four months' study in the Municipal Hospital be obligatory to nurses at the Philadelphia General.

TENNESSEE

Personal.—Dr. J. J. Neeley has been reelected superintendent of the Western Hospital for the Insane, Bolivar.——Dr. J. T. Wilson, Nashville, is reported to be in a hospital in Little Rock, suffering from a dislocated shoulder, a sprained ankle and other injuries received in an accident on the Iron Mountain road near Argenta.——The office of Dr. W. A. Nailling, Union City, was burned recently.——Dr. Michael Campbell, superintendent of the Eastern Hospital for the Insane, Bearden, was struck by a rock thrown by an insane patient, June 30, and sustained a fracture of the skull.——Friends and associates of Dr. Henry Berlin, Chattanooga, gave him a dinner, June 23. Dr. Berlin has started for Egypt to be gone six months.

TEXAS

New State Laboratory.—Dr. Henry Hartman, the state bacteriologist, formally commenced work in the new laboratory of the State Board of Health, June 15. The laboratory will make and provide anti-typhoid vaccine, diphtheria antitoxin, vaccine virus and antimeningitis serum. All of these serums and antitoxins are to be sold to the people of the state at cost.

GENERAL AND FOREIGN

Railway Surgeons Meet.—The seventeenth annual conference of the Association of Surgeons of the Southern Railway was held in Washington, D. C., June 11-13. Norfolk, Va., was selected as the next place of annual meeting, and the following officers were elected: president, Dr. H. W. Blair, Sheffield, Ala.; vice-presidents, Dr. M. N. Stow, Jesup, Ga.; M. W. O'Brien, Alexandria, N. C.; J. E. W. Helde, Rockville, S. C., and J. H. Hamilton, Union, S. C., and secretary-treasurer, Dr. J. U. Ray, Woodstock, Ala. (reelected).——At the annual meeting of the Baltimore and Ohio Association of Railway Surgeons held in Philadelphia, Dr. C. F. Winston, Cincinnati, was elected president; Dr. John Palmer, Jr., Wilmington, Del., first vice-president, and Dr. C. E. Johnson, Philadelphia, treasurer (reelected).

International Artificial Pneumothorax Association.—At the close of the recent International Tuberculosis Congress at Rome, those interested particularly in the method of treating tuberculosis by artificial pneumothorax organized an international association to promote this method of treatment. It is proposed to publish an annual bulletin listing the members, and thus constituting a guide to specialists and institutions making a practice of artificial pneumothorax treatment. The membership fee is stated in the *Policlinico* to be 5 lire (1 dollar). Those interested should write to Professor Saugmann, Vejlefjord-Daugaard, Denmark, or to Professor U. Carpi, Pavia, Italy, assistant at the medical clinic at Pavia in charge of Professor C. Forlanini, a pioneer in this method of treatment.

Bubonic Plague.—The existence of bubonic plague in Havana, Cuba, has been definitely determined. A case at the Las Animas Hospital has been demonstrated to be plague and three other patients in the hospital are said to be ill and showing similar symptoms. Suspected houses are being fumigated, the rat killing corps of the Health Department has been reenforced and orders have been issued for a warfare on rodents.——The Louisiana State Board of Health has decided to inaugurate an early campaign for rat extermination and is preparing circulars imparting information to the public and asks public cooperation in the work.——The

health officer of the port of New York held up the steamer *Philadelphia* of the Red D line which made a stop at San Juan, Porto Rico, June 21. The steamer was released after examination of rats for bubonic plague had been found to be negative.——Passed Assistant Surgeon Grubb, San Juan, reported, June 25, that rat examinations indicated that a mile of the water front was infected. Measures were being taken to limit the infection to the island of the old city. The worst houses in the infected area were being destroyed after being first surrounded by a wire fence. Systematic catching and laboratory examination of rats and daily house inspection were being carried on. Observation and detention camps had been provided. Three deaths had occurred in the suburbs.——Colonel Jefferson R. Kean, Major Frederick Russell and Lieutenant Frederick Foucar, M. C., U. S. Army. have gone to San Juan, with a complete laboratory equipment and everything necessary for exterminating rats and handling the disease condition. Major Bailey K. Ashford of the Medical Corps is already at San Juan.——Passed Assistant Surgeons R. H. Creel and Williams, U. S. P. H. & M.-H. Service, have gone to Porto Rico and will assist Passed Assistant Surgeon Grubb in the work against the plague.——Most of the cases in Porto Rico were found in Puerto de Tierra and the district connecting the walled city of San Juan with the main island, the inhabitants of which are mostly all laborers.——Up to July 10 no new cases of plague had been reported from Cuba or Porto Rico. Three steerage passengers from Havana were taken from the steamer *Chalmette* and will be detained at the New Orleans Quarantine Station until it is ascertained that they are not infected.——The work of destroying rats along the New York, Galveston and Mobile water fronts is still under way.——A regulation has been approved by Surgeon General Blue prohibiting passengers from Havana from entering any port in Florida until they have been detained seven days at the Pensacola Quarantine Station.

International Congress on Hygiene.—Thirty-two foreign countries have accepted the federal government's invitation to participate in the Fifteenth International Congress on Hygiene and Demography in Septemi.., and lists of official delegates appointed have already been received from twenty-five. These lists contain many names which are well known both to the medical profession and to sanitarians in general as foremost authorities in their particular lines of endeavor. Among the Belgian delegates will be Professor Jules Bordet who first, in connection with Gengou, called attention to the now famous Bordet-Gengou phenomenon of complement fixation on which some of our newest and most delicate tests in laboratory diagnosis depend. The list of the Danish official delegates includes the name of Dr. Thorvald Madsen, the director of the State Serum Institute of Copenhagen. Among the French delegates, the names most familiar to the American scientific world are those of Dr. Laveran, member of the institute and of the Academy of Medicine, the discoverer of the malarial organism; Dr. Jacques Bertillon, chief of the Bureau of Municipal Statistics of Paris, and known in this country as the moving spirit in the compilation of the causes of death adopted by the international commission; Professor Jules Courmont, of the University of Lyons; Dr. Chantemesse, the distinguished sanitarian, and Dr. Netter of the University of Paris. The list of the German official delegates includes the names of Dr. Fraenkel, of Halle; Dr. August Gärtner, whose researches on meat poisoning and the paratyphoid group of organisms were the first in this field; the distinguished anatomist, Dr. His, famous for his anatomic studies; and Dr. Lehmann, of the Julius-Maximilians University. Among others, Great Britain has named Dr. Newsholme, who, in addition to greatly activating the progress of sanitation in England, has labored unceasingly and effectively to reduce the infant mortality rate in that country; and Professor G. Sims Woodhead, the renowned pathologist of Cambridge University. Among her delegates, Norway has appointed Professor Axel Holst, the distinguished bacteriologist of the Royal Frederik's University of Christiania. Sweden will send as one of its delegates Professor Dr. Alfred Pettersson, the chief of the bacteriologic section of the state Institute for Medical Research. These are only a few of those who have been officially designated by their respective governments to represent them at the congress. The programs of the sections contain long lists of some of the most distinguished names known to medical and sanitary science. In the United States interest in the congress has become widespread. Forty-seven of the forty-eight states of the union have officially accepted the Federal government's invitation to participate in the congress and most of our large municipalities have also accepted this invitation and will send official delegates. The Fifteenth International Congress on Hygiene is the most powerful instrument thus far for permanently improving the progress of sanitation in this country, and the new and permanent impetus which it may confidently be expected to give to progressive work in all branches of hygiene throughout the country is being eagerly awaited by those who are interested in civic welfare and public health.

International Congress for Neurology, Psychiatry and Psychology.—The Swiss Neurologische Gesellschaft has the organization of the next congress in charge and has appointed September, 1914, as the date and Berne the place. Professor Dubois of Berne will preside. The secretary has not yet been appointed. The last international congress of the kind was held at Amsterdam in 1907.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, June 22, 1912.

The National Insurance Act

The conflict between the profession and the government continues, but the end, whether it take the form of rupture of negotiations and practically unanimous refusal to work the act, or an arrangement due to concessions, which must be large, cannot be deferred much longer. In a previous letter to THE JOURNAL it has been pointed out that a weak point in the profession's defense is that it is open to the government not to administer medical benefit, but to hand over the money for that purpose to the friendly societies, who have in their employ at present a large proportion of the physicians of the country. As long as these hold their appointments, they must attend not only the present members of the societies, but the large accretion which is resulting from the act. The whole will in time amount to the great majority of the insured. This weak point in the profession's defense has been remedied by a pledge supplementary to the original one, declining to work the act except on terms satisfactory to the British Medical Association. By the new pledge, which is being signed with practical unanimity, the medical officers of friendly societies are placing in the hands of local committees of the British Medical Association (for use when it is decided that the time is ripe) the resignations of their appointments so far as they extend to insured persons. Also, the profession generally undertakes not to accept any appointment so resigned and to accept appointments dealing with insured persons only with the consent of the Association and, except in cases of urgent necessity, not to attend an insured person through the service of any voluntary charity, and not to cooperate with any member of the profession who is under contract to render service to insured persons on terms not approved by the profession. This pledge, of course, affects the specialist class, most of which hold hospital appointments and otherwise have not previously been involved in the struggle over the act, except as leaders of the general practitioners. All over the country meetings of hospital staffs have been held and it has been decided with practical unanimity to sign the pledge and stand with the general practitioners in their fight against the act. All other negotiations having failed, the government has agreed with the British Medical Association to appoint an independent accountant to examine selected sample books of accounts of physicians, with the object of ascertaining what would be fair remuneration. When that has been done the government hopes to come to close grips with the final stage of the controversy.

SANATORIUM BENEFITS UNDER THE ACT

While the medical benefits do not come into force under the act until the beginning of next year, the large sums voted by the state for the treatment of tuberculosis become available on July 15. Local health authorities are preparing schemes for the tuberculous, such as when fully developed will bring treatment within the reach of all the inhabitants within their area. Several types of physicians will be concerned in the work—general practitioners, special tuberculosis officers in charge of dispensaries, medical officers of sanatoriums and other residential institutions, health officers and school medical officers. The central feature will be the tuberculosis dispensary. In country districts, however, instead of a fixed dispensary there may be an expert who will visit different localities periodically. It is proposed that on an average there will be a dispensary unit for every 150,000 of the population, in charge of a specially trained medical officer. These "tuberculosis officers" will be in touch with the general practitioners attending patients in their homes. On their efficiency will depend in many cases early recognition of

the disease. Their salaries will be a minimum of $2,500. Before appointment they must have had special training in chest hospitals, sanatoriums, or other suitable institutions.

Several conferences have been held at which the Chancellor of the Exchequer, Mr. Lloyd-George, endeavored to smooth matters. The insurance commissioners have approached the British Medical Association with the request to assist them in obtaining from the various district or provisional committees of the association the names of two representatives for the local insurance committees. According to the act, these committees will be composed as follows: three-fifths of the members to represent the friendly societies, one-fifth to be appointed by the local county council, two members by any association of physicians in the district, and the remainder by the insurance commissioners. The State Sickness Insurance Committee of the British Medical Association has replied to the insurance commissioners stating that the association cannot assist them in the manner indicated until such time as it is satisfied that the minimum demands of the medical profession in regard to the act will be conceded. Nominations have been made for the annual election of the central council of the British Medical Association. One of the outside bodies (referred to in previous letters to THE JOURNAL) formed for the purpose of uniting non-members of the association in resistance to the act and of promoting a more active resistance on the part of the association, the generalship of whose leaders is considered to have been faulty at the critical time, has put forward a "ticket" of selected candidates, stalwarts, whom it asks the members to support. This body, called "The National Medical Union," was formed in Manchester and has a large membership.

SCHEME FOR PUBLIC MEDICAL SERVICE

The State Sickness Insurance Committee of the association has brought forward an elaborate scheme for a "public medical service" (THE JOURNAL, May 4, p. 1386) to be administered by the profession as alternative to the insurance act in case the government fails to grant the demands of the profession. The scheme takes two forms: one based on the capitation system, the other on payment per attendance. The service is defined as constituted for the organization of the supply of medical attendance and medicine for persons unable to pay the ordinary medical charges. Subscribers to the capitation scheme will be admitted only after medical examination. There will be an income limit, to be determined, but in no case to exceed $10 a week. The subscription is not to be less than 6 cents a week, inclusive of drugs, provided that in the case of persons who are below the ordinary standard of health special rates of subscription may be prescribed. A subscriber may choose his medical attendant from the physicians of the service who are willing to attend him, and shall for the time be entitled to the services of this physician only. Except by the consent of both physicians concerned, he cannot change his physician more than once in six months, giving at least a calendar month's notice, terminating on June 30 and December 31. Subscribers shall be entitled to ordinary medical and surgical treatment at the physician's office within specified hours, and when their condition requires it, to treatment at home, if within two miles of the doctor's house, other than night calls and special visits. The following are excluded from and must be paid for according to a scale to be fixed: confinements, miscarriages, vaccination, fractures, dislocations, consultations, administration of a general anesthetic, night visits (between 8 p. m. and 8 a. m.), certificates, illness in consequence of misconduct, and dentistry. It may be remarked that these terms are about 200 per cent. higher than those under which contract practice is now carried on all over the country with friendly societies. It must be borne in mind, however, that there is a tendency for contract work to be scamped in consequence of its low rate of remuneration. Under the scheme of payment per attendance, the subscribers will make weekly payments, as in the previous scheme, but from the fund so created the physicians instead of receiving the capitation fees will be paid at the rate of 50 cents per visit at the patient's house, with 12 cents extra for medicine and 36 cents for consultation at the office. This scheme is not in final form. It is brought forward for consideration by the divisions of the association and will come before the representative meeting at the forthcoming annual meeting of the association.

Deaths Due to the Use of Hedonal as a General Anesthetic

The synthetic product—methyl-propyl-carbinol-urethane—known as hedonal has recently, following the practice of Fedoroff, been used in this country as a general anesthetic. It is administered by intravenous infusion in the strength of 0.75 per cent. in saline solution. It has been used in over 100 cases by Mr. C. M. Page at St. Thomas' Hospital. He regards the method as valuable and has had no death. Three deaths, however, have recently been recorded. In one case a man, aged 48, died at the Golden Square Throat Hospital after the operation. An inquest was held and, in accordance with the medical evidence, a verdict was returned that death was due to heart failure from blood-poisoning, accelerated by the administration of the anesthetic and the operation. In Hull, a death from respiratory failure, a few hours after the operation, when all apprehension of danger has passed has been reported. In the Hospital for Sick Children, Great Ormond St., a third death has occurred. The patient was a girl, aged 8, whose respiration failed as the stitches were being inserted. The pathologist stated that the status lymphaticus was a contributory cause of death.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, June 21, 1912.

Antityphoid Vaccination

Antityphoid vaccination has created an interesting discussion in France. At a recent meeting of the Académie des Sciences, M. Metchnikoff reported the results of attempts, made by Dr. W. Broughton Alcock, to apply antityphoid vaccination to man, following the method used by M. Metchnikoff and M. Besredka with the monkey. Sensitized virus was used for the vaccination. At the Académie de médecine, on the other hand, Professor Chantemesse and Professor Vincent insisted on the efficacy of vaccine obtained from killed bacilli. While recognizing that the injection of living bacilli confers a strong immunity to animals, they believe that it should not be used with man because it exposes him to very grave risks (typhoid, biliary infection, etc.). Such an injection might make the subject a bacillus-carrier. They conclude, therefore, that the inoculation of living bacilli cannot be recommended under any form, sensitized or attenuated.

M. Metchnikoff disputed the efficacy of the vaccinations made by Chantemesse and Vincent on the soldiers in Morocco by showing that their figures are scarcely convincing. The vaccinations were made when the epidemic was already on a decline, and partly, too, in localities where there were very few cases of typhoid, while, in order to make the results more favorable, the non-vaccinated subjects were taken from places where the fever was much more prevalent. In short, M. Metchnikoff thinks that this trial in Morocco, instead of proving the favorable influence of antityphoid vaccination, shows simply that the statistics given can be easily misinterpreted and that they should be accepted as significant only with great caution.

The Description of Conscripts

The Minister of War has ordered much greater precision in the descriptions given in the papers of conscripts and in the military journals. The principal modifications concern the color of the hair and eyes, the shape of the forehead, nose and mouth, and on the identification of particular points, as scars, cuts, burns, abscesses, tattooing, etc. The idea of taking finger-prints, which was under consideration, has been discarded as savoring of methods of identification of criminals.

An Agreement Between France and the Netherlands for the Repatriation of Insane Paupers

An agreement has been made by France and the Netherlands for the repatriation of insane paupers of the two countries, to go into effect on August 10, each agreeing to receive its citizens who have become insane and have become charges of the other contracting state. This repatriation will be conditional, in each case, on the consent of the state which the patient is to leave. The fact that the insane person has lost his nationality cannot be opposed to the applying state unless the patient has in the meantime become naturalized elsewhere. This agreement does not apply to the colonies of the two contracting states.

The Arrest of Macaura

The public prosecutor has at last decided to prosecute Macaura, whose exploits I have described in a previous letter (THE JOURNAL A. M. A., June 8, 1912, p. 1767). Macaura was accused of the illegal practice of medicine on the complaint of the syndicat des médecins de la Seine and of swindling on the complaint of several of his clients. Naturally Macaura protested, declaring that he does not practice medicine and that he confines himself to extending the use of "Pulsoconn."

A French graduate physician, he said, was connected with his office to examine the patients to determine whether "Pulsoconn" might be usefui to them. The examining judge observed that the presence of this physician does not change the situation in the least, because this physician is merely an employee. The examination resulted in the arrest and imprisonment of Macaura, who was later released on 50,000 francs ($10,000) bail. The next day the walls of Paris were covered with Macaura's "Proclamation to the French People," published also in the daily papers, in which Macaura modestly declares that he is now successfully conducting the greatest campaign against sickness ever known in the history of France.

Death of Dr. Villemin

Dr. Paul Villemin, surgeon of the Hospitals of Paris, djed very suddenly, aged 51. He was the son of the celebrated Villemin who discovered that tuberculosis is contagious.

The Mission of Dr. Legendre

The return of Dr. Legendre, army physician, who with Captain Noirot and Lieutenant Dessirier, left France, Sept. 12, 1911, to explore the provinces of Yunnan and of Le-Chuen in China, has been celebrated recently. During his journey Dr. Legendre with one of his companions, escaped death only by an almost superhuman calmness and courage. On Dr. Legendre's arrival, General Lebon, vice-president of the geographic society, gave an earnest address in which he said that Dr. Legendre had been the benefactor of the region of Le-Chuen in establishing at its capital a school of medicine.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, June 14, 1912.

Vital Statistics of Prussia in 1911

The death-rate and especially the infant mortality of the third quarter of last year demands especial attention, because the great heat and dryness could not help but exert an influence on the health of the people at large, and especially on that of children of tender years. It was hardly to be assumed, however, that it would be so marked as is shown by the official figures, the increase over the previous year being more than 50,000, or quite 32 per cent. The absolute increase in the cities and in the country was nearly equal, but relatively the increase was greater in the cities. In spite of the fact that the destructive influence of the abnormal weather made itself felt more markedly in the city than in the country, the death-rate compared with the entire population was only 20.50 (in 1910, 15.50) per 1,000 inhabitants in the cities, as compared with the country rate of 20.91 (in 1910, 16.24). Compared with the whole population of the state, the death-rate was 20.72 compared with 15.90 in 1910 and 16.30 in 1909. Of every thousand people, about five more died than in the previous year. The increase of deaths was noted at all ages, but was most marked in children under one year, amounting to not less than 65.4 per cent. In the cities the infant mortality increased from 23,609 to 41,589, or about 75.7 per cent., while in the country it rose by 57.8 per cent. Only 301,256 children were born living against 307,377 in 1910 and 361,287 in 1909. The reduction from the previous year was nearly 2 per cent. proportionally greater in the country than in the cities. The excess of births was only 9.28 for one thousand inhabitants, as compared with 15.16 and 18.11 in the two previous years. Fortunately, there was an increase in the number of marriages which is evidently connected with the improvement in economic conditions.

Institution for Psychopathic Children

The juvenile courts, which, as is well known, have been established for some years in Germany, have found that the abnormal social behavior of the young often depends on an abnormal mental constitution. Therefore the psychiatrists, especially Ziehen, former professor of neurology in Berlin, have sought means for the erection of an institution for the special treatment of needy children of this class. Such an institution, the first in Germany, has now been erected by the province of Hanover on the grounds of the Göttingen provincial Heil- und Pflegeanstalt, at a cost of $62,500 (250,000 marks). The institution is under the direction of Professor Cramer, to whom the credit of its erection is due. He has submitted all of the children in the public asylums of the province to a systematic examination as to their mental condition. Psychopathic traits were found in a large number of the pupils, degeneration from inherited taint, imbecility or conditions bordering on insanity. The new institute will admit those who are not suitable for an insane asylum and cannot be admitted into any of the existing charitable institutions. The education of these constitutionally inferior young people is to be undertaken in the institute by methods adapted to each individual case. The purpose is to be accomplished by medical treatment, instruction, moral care, and strictly regulated suitable employment of the pupils. In respect to the latter, work in the open air, especially the care of vegetables, fruit and flowers, and instruction in the most common handiwork, and also games and gymnastics are to be included.

Hygiene of Infants in Bavaria

The infant mortality in Bavaria was, for 1910, 20.2 per cent. of those born living, as compared with 21.7 for the previous year. The high mortality corresponds to a high birth-rate—in 1909, 33.4 births per 1,000 inhabitants as compared with 31.9 in the entire German empire. In 1908, organized efforts were made to combat infant mortality by creation of a central station for infant welfare. For this purpose the sum of $136,344.25 (547,377 marks) was expended, in addition to the expenses for crèches and for milk kitchens, which amounted to $120,300 (481,200 marks). In 1910, 169 stations for advice were in existence, conducted in the majority of cases by private or official physicians, which were attended by 10,196 children.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, June 22, 1912.

Unpleasant By-Effects of Excessive Ozonization

A few months ago the Austrian Parliament Hall installed an outfit for supplying a quantity of ozone for the improvement of the air during the sittings of the house. The ozone generated by an electric apparatus is driven by fans or ventilators into the hall. Ever since the installation of the arrangement, members of the parliament have continually complained of rheumatism and colds and the morbidity of the house has been exceedingly high. Medical members have ascribed this condition partly to the large volume of ozonized air pumped into the halls and corridors, producing cold draughts, and partly to the high percentage of ozone in the air. The latter effects are similar to those of radium, especially in rheumatic people, to which class, owing to their age, the majority of our members of parliament belong. It has been noted also that the temperature of the atmosphere in the house is comparatively very low; especially on hot summer days it is deliciously cool, but at the same time the food served in the restaurant of the house to the members quickly gets cold. As this complaint also dates back to the installation of the ozone ventilation plant, it is logical to ascribe it to that. At all events steps have been taken to find out the real by-effects and to ameliorate them.

Opening of the Radium Station in the General Hospital

Without any festivity a very important addition to the therapeutic armamentarium of the Allgemeines Krankenhaus has been made by the opening of the radium institute, an annex to the dermatologic clinic of Professor Riehl. The Radiumstation (that is its official title) will serve two purposes: first, it is, of course, intended for the treatment of the patients of the hospital itself; second, it will also stand at the disposal of the profession and the general practitioners outside the hospital, for a number of "radium cells" will be loaned to them, and water charged with emanation will be sold to them and their patients. The institute owns half a gram (7½ grains) of pure radium, valued at about $50,000, which has been presented by the ministry of public works from the radium factory in Joachimsthal. The "station" will be self-supporting, and any net profit is to go to its enlargement. A special scientific-research department will be added in a short time to this radium institute, which will devote its material to biologic investigation pertaining to radium. Already interesting results have been announced.

Medical Recruit's Term of Service with the Ranks Shortened

The new army act, which will go into force on October 1, provides a radical change of the terms of service for medical recruits, who have hitherto had to serve six months with the regular army barracks, had to do all other service like any regular soldier, but they could choose the time of their service between their twenty-first and twenty-fourth year of age.

Afterward they had to serve another term of six months as army doctors, of course after obtaining their degree of M.D. This term was served in the hospitals of the army or in the barracks. The students lost always half a year of their medical curriculum, and were thus at a disadvantage against their confrères who escaped army service. The new law stipulates a service of three months in the barracks for medical students, which service can be done during the university term, as it will occupy only little of the student's time, and afterward a service of nine months, after obtaining the degree of M.D., in the army hospitals. The advantage of the new law is obvious. Not only there is no loss of time for the medical student, but a distinct gain, because the nine months of hospital service will be very useful to him, and he at once starts with professional work, instead of military drill, as formerly. On the other hand, less stringent requirements as regards physical fitness will be in force for the recruiting of medical men, so that a large number of doctors will be enlisted in the army, if only for temporary service.

Professor Neusser's Health

The numerous friends and pupils of Professor Neusser, the famous physician whose interesting lectures on differential diagnosis always attracted so many attentive listeners, will no doubt learn with satisfaction that his health is improving as far as one can expect it in his condition. In fact, it has been said by him that he would gladly take up his tutorial work again, but there is hardly any hope for that.

Marriages

EDWIN CARTER BRANDON, M.D., Fairview, Ky., to Miss Pansy Rule of Earlington, Ky., at Clarksville, Tenn., June 19.

GEORGE LOUIS SCHNEIDER, M.D., to Miss Mary Alta Herander, both of South Williamsport, Pa., June 25.

JAMES EDWARD WALLACE, M.D., Biloxi, Miss., to Miss Fern Scott Loar of Hammond, La., at Biloxi, June 23.

ELBERT BAKER, M.D., Aurora, Mo., to Miss Matilda Dieckhoener of St. Louis, at Clayton, Mo., June 27.

THOMAS B. WILSON, M.D., Indian Mound, La., to Miss Annie Leigh Frierson of Frierson, La., June 20.

WYATT R. ARNOLD, M.D., Bedford City, Va., to Miss Pattie Wilmer Steptoe, at Boonsboro, Va., June 26.

HARRIET NOYES RANDALL, M.D., Roslindale, Mass., and Jesse Knowlton Flanders, at Roslindale, June 26.

ALFRED LEE CLIFTON, M.C., U. S. Navy, to Miss Gladys Burgess of Northampton, Mass., June 22.

CARROLL ROLLIN BANCROFT, M.D., to Miss Ellen Cecelia Kennedy, both of Anaconda, Mont., June 19.

EDWIN DANICK GARDNER, M.D., to Miss Evelyn Howes, both of Boston, at Rockland, Mass., June 20.

EDWARD STUART PARKER, M.D., Idagrove, Ia., to Miss Dora Hall Young of Mankato, Minn., June 20.

RALPH DUDLEY HEAD, M.D., Pittsfield, Mass., to Miss Margaret Cole of Andover, Mass., June 26.

ARTHUR ST. CLAIR BRUMBAUGH, M.D., to Miss Mary Louise Dunn, both of Altoona, Pa., June 25.

JOHN F. RICHARDSON, M.D., to Miss May Nestor, both of Denver, at Syracuse, N. Y., June 25.

JOHN ANDERSON PETTEY, M.D., to Miss Anna Eva Dustin, both of Brockton, Mass., June 25.

GEORGE NORBERT HEMMER, M.D., to Miss Ethel May Place, both of Syracuse, N. Y., June 25.

FRANK MILTON POGUE, M.D., Trafford, Pa., to Miss Grace Stully, at Towanda, Pa., June 18.

FRANK DE WITT STINSON, M.D., to Miss Byrd Hartenbower, both of Douglass, Kan., June 19.

EDWARD LIEURANCE, M.D., to Mrs. Emma Record, both of Crow Agency, Mont., June 16.

ARTHUR A. KAHALA, M.D., to Miss Mamie Villeman, both of Bemidji, Minn., June 19.

PHILIP CARTER WASHBURN, M.D., to Miss Elinor Lothrop, both of New York City.

RICHARD BERT PLATT, M.D., to Miss Olena Ferguson, both of Friend, Neb., June 26.

HUGH MCPHERSON, M.D., Tyson, Ala., to Miss Louise Pulliam of Louisville, recently.

LOUIS HERLY, M.D., to Miss Nettie Aaron, both of New York City, June 26.

EUGENIA A. MILLER, M.D., and Harry I. Klawans, both of Chicago, June 29.

Deaths

John Boyce Donaldson, M.D. One of the most notable practitioners of Pennsylvania and a pioneer in the work of medical organization, died at his home in Canonsburg, June 29, from heart disease, aged 63. He was born in Marshall County, W. Va., the son of a well-known physician of Bridgeville. His medical course was taken in the Western Reserve University at Cleveland, from which he graduated in 1872. He began practice in Pittsburgh, but at the end of a year removed to Bridgeville, and in 1873 located in Canonsburg. In addition to his prominence as a practitioner Dr. Donaldson was always identified with the activities of his home city. In 1882 and 1883 and from 1902 to 1903 he was burgess of Canonsburg and he also served as councilman and school director. In 1888 he was elected a member of the legislature and served during one session. He was for twelve years secretary of the Washington County Medical Society, holding this position at the time of his death and was the first to suggest a conference of county secretaries. He was also a member of the Medical Society of the State of Pennsylvania and its president in 1910-1911, and a member of the American Medical Association. Dr. Donaldson was a firm believer in organization as a means of raising the standards of the medical profession. He was editor of the *Medical Program of the Medical Organization of Washington County, Pa.*, the earliest county medical society bulletin. On account of his rescue work at the time of the Johnstown disaster, the governor of Pennsylvania conferred on Dr. Donaldson a special certificate of commendation. Medical organization has sustained a great loss in the death of Dr. Donaldson, the medical profession has lost an eminent practitioner, the state and county a public-spirited citizen and his fellow townsmen, a cherished and faithful friend.

Manuel R. Moreno, M.D. Medical College of the State of South Carolina, Charleston, 1878; city physician of West Tampa, Fla., in 1891, and for two years thereafter acting assistant surgeon in the U. S. P. H. & M.-H. Service; an expert in yellow fever; for several years, beginning with 1895, United States Counsel at Cienfuegos, Cuba; later a member of the Florida legislature from Monroe County; died at his home in Tampa, June 17, aged 65.

Edward Field Parsons, M.D. College of Physicians and Surgeons, New York City, 1858; a member of the Connecticut state legislature in 1887; for many years medical examiner for the town of Enfield where he had practiced for nearly half a century; for twenty-five years a member of the school board; died at his home in Thompsonville, June 13, from cerebral hemorrhage, aged 78.

Robert John Devlin, M.D. College of Physicians and Surgeons, New York City, 1881; a member of the American Medical Association and the New York Academy of Medicine; for thirty years dermatologist to the Northern Dispensary, New York City, and consulting dermatologist to the French Hospital; died at his home in New York City, June 26, from pneumonia, aged 51.

Edwin Saunders Ricketts, M.D. Miami Medical College, Cincinnati, 1877; a member of the Ohio State Medical Association; American Association of Obstetricians and Gynecologists, British Medical and British Gynecological Society; a well-known gynecologist and surgeon of Cincinnati; died at the hospital of his brother in that city, June 12, from carcinoma of the liver, aged 59.

Edwin Morrison Ward, M.D. College of Physicians and Surgeons, New York City, 1862; a surgeon of United States Volunteers during the Civil War; attending physician to the Mountainside Hospital, Montclair, N. J.; formerly president of the board of health of Bloomfield, N. J.; died at the home of his nephew in Newark, June 18, from cerebral hemorrhage, aged 72.

Samuel Beecher Hunter, M.D. Jefferson Medical College, 1855; a member of the American Medical Association; surgeon of the Seventh Maine Volunteer Infantry throughout the Civil War; for many years acting assistant surgeon, U. S. P. H. & M.-H. Service, and in charge of the Marine Hospital at Machias, Me.; died at his home in Machias, June 2, from senile debility, aged 81.

Matthew Francis Dunn, M.D. College of Physicians and Surgeons, New York City, 1885; a member and once president of the Medical Association of Georgia; chief of staff of St. Joseph's Hospital and attending physician to St. Mary's Orphans' Home and St. Francis Orphan Asylum, Savannah; died at his home in Savannah, May 31, aged 51.

Harry H. Harrison, M.D. Kentucky School of Medicine, Louisville, 1891; a member of the Mississippi State Medical Association; a leading practitioner of Jackson; died at his home, June 14, from nephritis; aged 50. At his funeral the pallbearers were selected from the medical profession of Jackson.

W. Frederick Mueller, M.D. University of Marburg, Germany, 1869; a surgeon in the Prussian service during the Franco-German War and for three years thereafter a surgeon on transatlantic steamers; for thirty years a practitioner of Denison, Ia.; died at his home in that city, June 12, aged 68.

John Elias Johnson, M.D. University of Louisville (Ky.) 1872; New York University, New York City, 1879; a member of the American Medical Association; died recently at his home at Lebanon Junction, Ky., from heart disease, aged 67, and was buried in the Lebanon Junction Cemetery, June 14.

George W. Hayden, M.D. Medical School of Georgia, Augusta, 1858; a charter member and formerly president of the Johnson County (Tex.) Medical Society; assistant surgeon of the Fortieth Alabama Infantry, C. S. Army, during the Civil War; died at his home in Fort Worth, Tex., June 23, aged 73.

Henry J. C. Sieving, M.D. Beaumont Hospital College of Medicine, St. Louis, 1897; afterward a lecturer in his alma mater and an instructor in Marion Sims Medical College; a member of the American Medical Association; died at his home in St. Louis, June 21, from cerebral hemorrhage, aged 53.

Charles O. Cooley, M.D. Washington University, Baltimore, 1877; a member of the American Medical Association and Minnesota Valley Medical Association; one of the best-known practitioners of southern Minnesota; died at his home in Madelia, Minn., June 13, aged 61.

James Beatty Spencer, M.D. New York University, New York City, 1882; for several years a member of the board of education of Wellston, O.; a specialist on diseases of the eye; died in his home at Wellston, June 24, from disease of the kidneys and liver, aged 54.

John Patten Wales, M.D. University of Pennsylvania, Philadelphia, 1852; formerly a member of the American Medical Association; a veteran of the Civil War; mayor of Wilmington, Del., in 1882; died at his home in that city, June 24, from heart disease, aged 81.

John S. Black, M.D. University of Alabama, Mobile, 1872; a member of the State Medical Association of Texas and formerly president of the Greenwood County Medical Society; a Confederate veteran; died at his home in Lanius, June 20, from typhoid fever.

Grant Abram Reber, M.D. St. Louis University, 1903; a member of the American Medical Association; of Okema, Okla.; who went to Phoenix, Ariz., a few months ago on account of his health; died in Albuquerque, N. M., June 18, aged 42.

Robert Clark, M.D. University of Minnesota, Minneapolis, 1903; formerly health officer of Plummer but more recently a practitioner of Thief River Falls, Minn.; died in Plummer, June 2, from what is said to have been acute alcoholism, aged 34.

Loren Bisco Doxey, M.D. Rush Medical College, 1894; formerly of Columbus, Neb., and Washburn and Des Moines, Ia., but recently a practitioner of Savannah, Tenn.; was found drowned in the Tennessee River, at Clifton, June 19, aged 53.

George R. Patrick, M.D. University of Maryland, Baltimore, 1879; a member of the American Medical Association and a practitioner of high rank in Gaston County, N. C.; died at his home in Lowell, June 19, from cerebral hemorrhage, aged 57.

Walter Scott Blakeman, M.D. Vanderbilt University, Nashville, Tenn., 1879; a member of the Kentucky State Medical Association and a Confederate veteran; died at his home in Glasgow Junction, June 19, from heart disease, aged 75.

Thomas J. Birch, M.D. University of Pennsylvania, Philadelphia, 1877; a member of the American Medical Association; formerly coroner and county physician of Schuylkill County, Pa.; died at his home in Port Carbon, June 24, aged 73.

David Hudnal Connally, M.D. Atlanta (Ga.) Medical College, 1860; surgeon of the Gate City Guards, C. S. Army, during the Civil War; health officer of Tyler and Smyth County, Tex.; died recently, at his home in Tyler, aged 74

Albert M. Williamson, M.D. Medical College of Ohio, Cincinnati, 1871; a veteran of the Civil War and for thirty-five years a practitioner of Dayton, O.; died at his home in Hyde Park, Cincinnati, June 13, from heart disease, aged 68.

Alonzo B. Oliver, M.D. Memphis (Tenn.) Hospital Medical College, 1894; of Memphis; a member of the Tennessee State Medical Association; who recently went to California for his health; died in Los Angeles, June 14.

Callom B. Jones, M.D. Medical College of Virginia, Richmond, 1869; of Ashland, Va.; a Confederate veteran; died in St. Elizabeth's Hospital, Richmond, Va., June 14, a day after a surgical operation, aged 70.

William Miles Clark, M.D. Memphis (Tenn.) Hospital Medical College, 1894; a member of the State Medical Association of Texas; of San Antonio; formerly of Floresville; died in Houston, May 21, aged 48.

Franklin Marion Brantley, M.D. Medical College of Georgia, Augusta, 1847; a charter member of the Medical Association of Georgia; died at his home in Senoia, June 5, from senile debility, aged 93.

Ludwig Otto Thoma, M.D. University of Buffalo, 1870; of Buffalo; who went to Berlin recently to arrange a trip for the German-American Teachers Association; died in a hospital in Berlin, June 22.

William Isaac Pace (license, Tennessee, 1889), for many years a practitioner of Toms Creek, Tenn.; died at the home of his daughter, in Nashville, June 15, from cerebral hemorrhage, aged 63.

Thomas A. Guest, M.D. (license, Illinois, 1899); Harvey Medical College, Chicago, 1901; a member of the Illinois State Medical Society; died at his home in Congress Park, Ill., June 23, aged 44.

William E. Chadwick, M.D. Vanderbilt University, Nashville, Tenn., 1907; a member of the Tennessee State Medical Association; died at his home in Murfreesboro, June 17, aged 29.

George Franklin Lucas, M.D. New York University, New York City, 1870; a member of the Medical Society of the State of North Carolina; died at his home in Currie, June 18, aged 65.

Elsie Dexter Lester Dana, M.D. New York Medical College and Hospital for Women, New York City, 1864; died at her home in Brooklyn, June 9, from senile debility, aged 82.

William Russell Lewis, M.D. Rush Medical College, 1874; a member of the Illinois State Medical Society; died at his home in Oak Park, Ill., June 27, from heart disease, aged 64.

Glen A. Emery, M.D. Columbus (Ohio) Medical College, 1879; formerly mayor of Rendville, O., and coroner of Perry County; died at his home in Toledo, June 14, aged 59.

Mark Trafton Dodge, M.D. Medical School of Maine, Portland, 1883; formerly a member of the state legislature of Maine; died at his home in Troy, May 18, aged 61.

Earl A. Scofield, M.D. University of Buffalo, N. Y., 1887; a member of the Medical Society of the State of New York; died at his home in Bemus Point, June 24, aged 57.

Ernest W. Pinson, M.D. Louisville (Ky.) Medical College, 1890; a member of the South Carolina Medical Association; died at his home in Cross Hill, May 18, aged 43.

Austin Elijah Palmer, M.D. Bellevue Hospital Medical College, 1869; a member of the Illinois State Medical Society; died suddenly at his home in Morris, aged 65.

James Andrews Douglass, M.D. Miami Medical College, Cincinnati, 1880; died suddenly at his home in Alliance, Ohio, June 21, from cerebral hemorrhage, aged 54.

James F. Purdon, M.D. University of Louisville, Ky., 1881; formerly of Louisville; died at his home near Shepherdsville, Ky., June 19, from asthma, aged 61.

Jacob C. Brubaker, M.D. Jefferson Medical College, 1855; formerly of Chicago, and Waseca, Minn.; died at his home in Colorado Springs, June 18, aged 76.

William Edward Gordon, M.D. Missouri Medical College, St. Louis, 1890; died at his home in Old Ripley, Ill., June 19, from heart disease.

I. Cleophas Perrault, M.D. Laval University, Quebec and Montreal, 1864; died at his home in Beloeil, Que., June 22, aged 70.

Correction.—The Dr. John L. Short whose death was recorded in THE JOURNAL, June 22, was not John L. Short of Rolla, Mo., but a physician of the same name living in La Grange, Ind.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CALCIUM GLYCEROPHOSPHATE

Its Poor Quality Shown by a Report of the Council on Pharmacy and Chemistry

Believing that the glycerophosphates were of some probable value, the Council decided to describe calcium glycerophosphate in New and Nonofficial Remedies, so that definite standards of quality might be prescribed. The Association's Chemical Laboratory having, at the request of the Council, taken up the examination of the supply of calcium glycerophosphate on the American market and entered into correspondence with the manufacturing houses, now reports that no product of even fair quality is to be had, and that those who make it appear not inclined to make improvements. Investigation having shown that the glycerophosphates are probably not superior to ordinary inorganic phosphates, there is little likelihood that a consequent decreasing demand will be any inducement to provide a good quality of drug in the future. In view of these conditions, the Council decided not to describe the drug in New and Nonofficial Remedies, and authorized the publication of the report which appears below.

W. A. PUCKNER,
Secretary.

"We Must Fight—TOGETHER!"

SUPPLEMENTAL REPORT ON CALCIUM GLYCEROPHOSPHATE

The glycerophosphates have come into rather wide use during the last twenty years. This use was based on the belief that because of the chemical relation between glycerophosphates and lecithin, the former were more readily assimilable than inorganic phosphorus compounds. While the evidence for the value of glycerophosphates was not altogether satisfactory, it was considered sufficient to give these products a place among the remedies of possible value and, therefore, the Council decided to describe calcium glycerophosphate in New and Nonofficial Remedies. Since the Council reached this decision, experiments by Fingerling,[1] McCollum and Halpin, and others have shown that animals can form organic phosphorus compounds (lecithin, neucleoproteids, etc.) out of inorganic phosphates quite as readily as from organic phosphorus compounds. Hence, it is probable that the glycerophosphates are of no more value in phosphorus metabolism than the inorganic phosphorus compounds.

At the request of the Council the examination of the available supply of calcium glycerophosphate was taken up in the Association laboratory. The following report from the laboratory gives the result of this examination and indicates the efforts which the laboratory has made to secure the adoption of a suitable standard whereby the quality of the product may be judged.

The laboratory undertook the study of calcium glycerophosphate with the view of proposing standards for its quality. Five specimens were purchased and examined. While a pure specimen should have a faintly alkaline reaction, should be practically free from chlorids, sulphates and alcohol-soluble matter, should contain about 17.5 per cent. of calcium and yield about 55.7 per cent. of ash, the specimens examined gave the following results:

The specimen bearing the label of the Mallinckrodt Chemical Works was faintly alkaline in reaction, contained 1.8 per cent. of chlorid (calculated as sodium chlorid), 0.66 per cent. of alcohol-soluble matter, lost 4.5 per cent. of its weight by drying over sulphuric acid, left 51.9 per cent. of ash on ignition and yieided 12.7 per cent. of calcium by the method used for the determination. This specimen contained considerable amounts of a sodium salt, possibly sodium glycerophosphate.

The specimen sold under the Powers-Weightman - Rosengarten Co. label contained about 1 per cent. of sodium chlorid, 1.8 per cent. of calcium sulphate, 0.7 per cent. of alcohol-soluble matter, free acid equivalent to about 3 per cent. of citric acid, lost 3.5 per cent. of its weight when dried over sulphuric acid, left 51 per cent. of ash on ignition and yielded 15.6 per cent. of calcium.

The Schering and Glatz specimen, sold under the name of "Lime Tanol" with extravagant claims as to its purity, contained a trace of chlorid, about 1 per cent. of calcium sulphate, 3.5 per cent. of alcohol-soluble matter, free acid equivalent to about 4 per cent. of citric acid, lost 3.2 per cent. of its weight when dried over sulphuric acid. gave 50.7 per cent. of ash on ignition and yielded 15.7 per cent. of calcium.

The Squibb specimen contained a trace of chlorid, 0.6 per cent. of calcium sulphate, 6.3 per cent. of alcohol-soluble matter, free acid equivalent to about 9 per cent. of citric acid, 14.5 per cent. of calcium, lost 2.9 per cent. of its weight when dried over sulphuric acid, and left 47.7 per cent. of ash on ignition.

The Merck specimen contained a trace of chlorid, about 0.25 per cent. of calcium sulphate, 7.5 per cent. of alcohol-soluble matter, free acid equivalent to 9.5 per cent. of citric acid, 14.2 per cent. of calcium, lost 3 per cent. of its weight when dried over sulphuric acid, and yielded 47.8 per cent. of ash on ignition.

The examination showed that none of the specimens examined was completely soluble in water. Those which were most nearly soluble were such as contained considerable quantities of an organic acid. Two of the specimens contained considerable amounts of chlorid and four of them contained considerable quantities of sulphate. One specimen contained

1. Fingerling, G.: Die Bildung von organischen Phosphorverbindungen aus Phosphaten, Biochem. Ztschr., 1912, xxxviii, 448, xxxix, 239. McCollum, E. V., and Halpin, J. G.: Synthesis of Lecithins in the Hen, Proc. Am. Soc. Biol. Chem., 1911; Jour. Biol. Chem., 1912, xi, xiii. See also editorials in THE JOURNAL A. M. A., April 20, 1912, p. 1198; May 25, 1912, p. 1605.

both chlorid and sulphate. The alcohol-soluble material ranged from 0.66 per cent. to nearly 7.5 per cent., the greater part of it, apparently, being citric acid. In other words, all of the specimens were decidedly impure in one or more particulars. On comparing the results found in the examination with the standards prescribed in the foreign pharmacopeias and pharmaceutical commentaries—there is no American standard—it was found that none of the specimens complied with all of the requirements in any one of these authorities.

That some of the manufacturers were aware of the poor quality of their products is shown by the occurrence on the labels of their specimens of such qualifying phrases as "Calcium glycerophosphate soluble" and "Glycerophosphate of lime, about 95 per cent."

The findings were submitted, with suggestions for standards and with a request for criticisms to the respective manufacturers, who were also asked to propose standards. While the firms in a way acknowledged the general unsatisfactory condition of their products no definite promises of improvement were made.

Thus, according to this examination the market supply, including the proprietary brand "Lime Tonol" for which extravagant claims of purity have been made, are all of inferior quality. The products contain considerable quantities of impurities such as sulphates, chlorids, and foreign sodium and calcium compounds, the presence of the latter in most cases having been disguised by the addition of citric acid. The composition is such that none of the products on the American market is entitled to the name "calcium glycerophosphate." The report also shows that while the manufacturers have in general acknowledged the poor quality of their product, they have shown considerable indifference concerning its improvement. Since they have been unable or unwilling in the past to supply calcium glycerophosphate of fair quality, there is little likelihood that a decreased demand, which may be expected since the demonstration of its small value, will offer an inducement to improve the quality in the future. In view of these conditions, it is recommended that calcium glycerophosphate be not described in New and Nonofficial Remedies.

Association News

Date of the Next Annual Session

The Board of Trustees announces that the next annual session of the American Medical Association will be held in Minneapolis, June 17-20, 1913.

Correspondence

The Value of the Journal to the Country Practitioner

To the Editor:—In reading over your "Knocks and Boosts," I am rather surprised that the "knockers" criticize THE JOURNAL on the ground that it has too little of value to the general practitioner—that it does not help the country doctor. I have been a subscriber to THE JOURNAL ever since my senior year in medical school and have been what might be called a "country practitioner," but I never have received an issue of THE JOURNAL that has not contained something of interest or value to me. I look forward to the coming of THE JOURNAL in every Monday mail and am sure to miss it if it fails to appear. Even if I do not read everything it contains, yet I scan it carefully from cover to cover to be sure that nothing escapes me, for often I have found some helpful suggestion in the most unexpected place. I have tried other journals but have never been able to get so much value out of them as I invariably do from THE JOURNAL of the American Medical Association.

In the issue of THE JOURNAL for May 25, for example, I was interested in the article on the "Operative Treatment of Fractures" by Dr. Sherman, of Pittsburgh, because I occasionally have to refer fractures to a surgeon for operative treatment and if I know what other surgeons are accomplishing with this method I can judge of the results my patients are getting. I read the article on "Gas on the Stomach," because that is a complaint every physician has to treat. I read the article on the treatment of "Gonorrhea in Girls," because I can never tell when I may get a similar case. "Abdominal Pain as an Initial Symptom in Typhoid" should interest the general practitioner, who is sure to have a case of typhoid at least once in a year. Dr. Frank's article on "Medicine as Depicted in English Literature Before the Eighteenth Century" proved very interesting to me. Dr. Lovett's article on "The Atrophy of Muscle and Bone Resulting from Joint-Disease, Injury and Fixation" brought forcibly to my attention a danger which I had never appreciated and gave me an informing point in the diagnosis of long-standing joint troubles which I hope I shall ever bear in mind. I read with much interest the editorial discussion of "Life Without Bacteria," and comments on "Federal Meat Inspection," "Graduation Required in Mississippi" and "A Clean Daily." Under the Propaganda for Reform, which always has something good, I found a reprint of Samuel Hopkins Adams' exposé of Swamp Root.

But it would take too much space to enumerate all of the things in this one issue of THE JOURNAL that proved of interest to me. I look through the state medical news to pick up something about some friend or acquaintance or institution in other states. I often glean something out of the correspondence and Queries and Minor Notes, and I never fail to look through the book reviews and the review of the current medical literature, for many a time I have thus gathered a suggestion or bit of information that has proved of value to me in my practice.

It seems to me that the value of THE JOURNAL would stand on one of its departments alone, that of the Propaganda for Reform, containing especially the reports of the Council on Pharmacy and Chemistry. That feature alone has been of infinitely more value to me than the $5 per annum I pay for THE JOURNAL. It has thoroughly immunized me against the insidious attacks of the proprietary drug houses whose laudatory circulars and attractive samples uniformly go from the post-office to the waste-basket.

R. A. ALLEN, Carbonado, Wash.

Chloroform as an Anesthetic: A Protest Against the Report of the Committee on Anesthesia

To the Editor:—The conclusion of the Committee on Anesthesia that the use of chloroform is no longer justifiable in major operations (THE JOURNAL, June 15, 1912, p. 1909), is so extreme that I wonder at finding no protest. If this conclusion is to stand unchallenged, it follows that thousands of surgeons (mostly of the south) will be obliged to give up their favorite anesthetic; not always because they agree with the committee, but because they fear censure or suit for malpractice in the event of a fatality. Chloroform is used in Texas more than ten times as much as ether, and I feel sure that the same ratio exists in many other southern states. I feel sure that there are in Texas more than one hundred surgeons, whose experience would duplicate my own, viz., more than one thousand administrations of chloroform without a death. THOMAS J. TURPIN, Corpus Christi, Texas.

Induced Pneumothorax in Treatment of Pleurisy with Effusion.—V. Fossati reports in the *Semana Medica*, xviii, 1911, 769, six cases of pleurisy with effusion in which he aspirated the effusion and replaced it with about half the quantity of filtered air. The benefit was so marked that he advises this as a routine procedure. He states that by curing the pleural affection, danger of secondary involvement of the lung is prevented, as also development of adhesions which would interfere with pneumothorax treatment of the lung later; also that the introduction of air prevents the disagreeable sequences of thoracocentesis alone, and it permits total evacuation of the effusion.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THERAPEUTIC USE OF TUBERCULIN—TECHNIC OF VASECTOMY—FEE OF A PHYSICIAN CONSULTED DURING PREGNANCY BUT NOT CALLED AT LABOR

To the Editor:—1. What is the present state of opinion held by authorities on the subject as to the advisability of therapeutic use of tuberculin in chronic tuberculous conditions, such as of bones and glands?

2. Can you refer me to any literature on the technic of vasectomy under local anesthesia?

3. When a physician has been engaged for a confinement and he looks after the patient during pregnancy, makes a number of urine examinations and at various times gives advice to patient, can he collect the fee for attendance at time of labor if he is not called, he being unengaged at the time, another doctor being called in attendance? F. K. K.

ANSWER.—1. Tuberculin is generally believed to be a valuable remedy in treatment of chronic localized tuberculosis.

2. In THE JOURNAL, Sept. 30, 1911, p. 1152, under Queries and Minor Notes will be found a short discussion of vasectomy and a considerable bibliography. Reference is given there to an article by H. C. Sharp on "Vasectomy as a Means of Preventing Procreation in Defectives," printed in THE JOURNAL, Dec. 4, 1909, p. 1897, in which the technic of the operation as performed by him without local or general anesthesia is given.

3. Under the conditions outlined, to collect a fee for the service the physician was in readiness to render at the time of the confinement, the physician must prove that a contract existed—establish the fact he was "engaged." Unless the patient, her husband or guardian did enter into such a contract with the physician, the latter is in the position of the merchant from whose stock a purchaser turns to buy a like article at a rival store. The physician can collect his usual charges for the service he did actually render.

PREVENTION OF SEASICKNESS

To the Editor:—Please give information through THE JOURNAL as to the most efficacious remedies for the prevention and cure of seasickness. M. A.

ANSWER.—As a general proposition the more incurable a disease the more methods for cure are offered. This is true of seasickness. There is no sure preventive or sure cure. Various methods of prevention have been recommended, among which are the taking of large doses of bromids a day or two previous to going aboard. This will succeed in some instances. Methyl valerianate, chlorbutanol (chloretone) and veronal sodium have also been recommended. Bier's hyperemia of the head induced by constriction of the neck is also said to prevent seasickness. It need not be used while the patient is lying down and should be employed, of course, under the supervision of the physician. Hot dry packs over the entire body, including the head, kept up until the superficial vessels become fully dilated is a procedure which has been used successfully by H. W. Yemans, Manila, P. I. (THE JOURNAL, Dec. 21, 1907, p. 2107), for many years and is the most effective remedy employed by him during a long experience. Probably the best treatment is that which was advocated by Dr. Alfred C. Girard in THE JOURNAL, June 23, 1906, p. 1925. This consists of atropin sulphate, gr. 1/120, and strychnin sulphate, gr. 1/60, better given hypodermically. This should be taken immediately on going aboard and repeated every three to six hours for a day or two, or as necessary. This treatment was advocated by Dr. W. N. Skinner previous to its employment by Dr. Girard, as the latter acknowledges.

The advice commonly and freely given to the sufferer is to keep out of the stateroom, remain on deck, and move around. On the contrary, many find from practical experience that they get over the trouble much quicker and with less suffering by lying quietly in bed for one, two or three days, as may be necessary—that is, until their nervous systems become accustomed to the motion of the vessel. See also abstract 117 in THE JOURNAL, June 1, 1912, p. 1730.

THE DIRECTORY AND NOSTRUM LITERATURE

To the Editor:—I think the suggestion of A. C. (THE JOURNAL, July 6, p. 53), to omit the residence address in the Directory, is a good one. I find that for the last two or three years my "proprietary" mail and samples of drugs have been coming to my residence, much to my discomfort. The manufacturers have evidently obtained my residence address from the Directory and feel that I will give more attention to the samples and mail if they are delivered at my home. The reverse of this is true, however, as I am disgusted at receiving such articles at my residence.

I would also suggest that when advertising pamphlets and booklets are received they should always be torn up before being thrown in the waste basket. My waste paper is collected by the Salvation Army, and I feel that I should not help the dissemination of this semiprofessional literature by throwing, unopened, into the waste basket, pamphlets on various diseases and their treatment and proprietary remedies. We also make it a practice to spill or destroy samples of medicine sent to us through the mail, especially those that are not in New and Non-Official Remedies.

It may be too late, as these houses have the residence addresses of many physicians, but I am certain they are making a mistake in addressing physicians on business matters at their residences.

W. H. SNYDER,
[Chairman Academy of Medicine of Toledo and Lucas County.]

Medical Education and State Boards of Registration

COMING EXAMINATION

MAINE: State House, Augusta, July 16-17. Sec., Dr. Frank W. Searle, 776 Congress Street, Portland.

Will Require Supplementary Examination

At a meeting of the Illinois State Board of Health, held June 29, 1912, a resolution was adopted that candidates seeking a license in Illinois through reciprocity will be required to take an examination in materia medica or practice, or both, if their original licenses were obtained in states which do not require examinations in those subjects.

Pennsylvania Secures Reciprocal Relations

A recent statement from the office of the Bureau of Medical Education and Licensure, Harrisburg, states that reciprocal relations have been established by Pennsylvania with Nevada, New Jersey and Illinois.

Illinois January Report

Dr. James A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Jan. 17-19, 1912. The total number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 80 of whom 46 passed and 34 failed. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Bennett Medical College, Chicago	(1911, 2) (1912, 2)	4
Chicago Coll of Med and Surgery	(1911, 7) (1912, 1)	8
Coll. of Med. and Surg., Physio-Med., Chicago	(1911)	1
Hahnemann Med. Coll. and Hospital, Chicago	(1911)	2
Hering Medical College	(1911)	1
Jenner Medical College	(1911)	1
Northwestern University Medical School	(1911)	8
Reliance Medical College	(1911)	1
Rush Medical College	(1911, 5) (1912, 2)	7
Coll. of P. and S., Chicago	(1911)	4
Kentucky University	(1901)	1
Univ. of Mich., Dept. of Med. and Surg.	(1911)	1
University Medical College, Kansas City	(1911)	1
Syracuse University	(1907)	1
Long Island College Hospital	(1903)	1
Eclectic Medical College, Cincinnati	(1911)	1
Woman's Medical College of Pennsylvania	(1908)	1
University of Toronto, Ontario, Canada	(1911)	1
Royal College of P. and S., London	*(1897)	1
FAILED		
Chicago Coll. of Med. and Surg. (1912, 2)	(1905, 1) (1911, 5)	8
Bennett Medical College, Chicago	(1910, 2) (1911, 3)	5
College of Medicine and Surgery, Chicago	(1908)	1
Hahnemann Medical College and Hospital, Chicago (1910) (1912)		2
Illinois Medical College	(1910)	1
Jenner Medical College	(1905)	1
Northwestern Univ. Med. Coll.	(1910) (1911)	2
National Medical University, Chicago	(1909)	1
Coll. of P. and S., Chicago	(1910, 1) (1911, 3)	4
Reliance Medical College	(1910, 1) (1911, 2)	3
Rush Medical College	(1911)	1
Coll. of P. and S., Keokuk	(1893)	1
Louisville and Hosp. Med. Coll.	(1908)	1
American Medical College, St. Louis	(1911)	1
Univ. of Trinity Coll., Toronto, Ont.	(1897)	1
University of Rome, Italy	(1906)	1

* An examining body, not a medical college.

Medicolegal

Admissibility of Evidence for Impeachment of Medical Experts and to Prove Expert Knowledge

(Southern Railway Co. et. al. vs. Parham (Ga.), 73 S. E. R. 763)

The Court of Appeals of Georgia holds that a witness who testifies as a medical expert cannot be impeached by showing that in other cases he made mistakes in his diagnosis. Testimony as to his general reputation, and not as to his success or failure in special cases, is what is admissible for the purpose of impeachment.

In this case, a medical expert introduced by the plaintiff (Parham) testified as to the character and extent of the plaintiff's injuries. The defendants introduced a witness by whom they sought to impeach and discredit this medical expert by showing that on a previous occasion he had examined this witness and had stated that the witness was suffering from spinal concussion or "railway spine," the same diagnosis which the expert had made of the plaintiff's injuries, when, in fact, the witness had never been in a railroad accident and had never suffered from any spinal trouble. It is held that this testimony was properly excluded.

The court says that it hardly thinks that the value of the testimony of a medical expert can be impeached by instances of special cases in which he might have been mistaken in his diagnosis. So to hold would bring in issue the question as to whether or not in each particular case the diagnosis was correct or incorrect. While it might strike the ordinary mind that a medical expert could not be safely relied on in his diagnosis when he had stated on an examination that a person was suffering from spinal concussion, or "railway spine," when in fact the person had never been the victim of any railroad accident, or had never suffered from any spinal complaint, and while it might be argued that this medical expert in making a similar diagnosis of the plaintiff's injuries was indulging somewhat in a fad or a favorite theory, yet it must be manifest to any thinking mind that it would be unsafe, as well as unjust to the medical expert, to allow such special method of attack, unless at the same time the expert thus attacked were allowed an opportunity of meeting the attack by showing that the witness who testified that he was not injured had been in fact injured and was testifying falsely, and that as a matter of fact this diagnosis of the witness' condition was correct. This method of impeachment should not be permitted.

In support of the medical expert who testified in behalf of the plaintiff it was proper to admit in evidence testimony that he had held many positions in different sanatoriums and hospitals in which he had had extensive experience in medicine and surgery. One method of proving expert knowledge is to show expert opportunities and experience, and clearly this testimony was admissible for this purpose.

When Action for Malpractice is Barred

(Palmer vs. Jackson (Fla.), 57 So. R. 240)

The Supreme Court of Florida, Division A, holds that, in an action for damages, in which it is alleged that the defendant, a physician, "undertook the treatment of" the plaintiff, and that "it was the duty of the defendant as physician to properly and skilfully treat the plaintiff, but the defendant did so carelessly, negligently, and unskilfully treat the plaintiff that he was thereby injured," the cause of action is on an "obligation or liability not founded on an instrument of writing," and is barred in three years under Subdivision 5 of Section 1725 of the General Statutes of Florida of 1906, which provides that an action on a contract, obligation or liability not founded on an instrument of writing must be commenced within three years.

Milk-Licensing Powers Conferrable on Board of Health

(State ex rel. Niles vs. Smith (Fla.), 57 So. R. 426)

The Supreme Court of Florida, Division A, holds that the city of Jacksonville may regulate the sale of milk within its territorial limits, and require a license tax therefor. The city may authorize a board of health created by it to prescribe the forms to be used by applicants for licenses; it not appearing that the board has added therein burdens outside those fixed by ordinance. If the board should add unreasonable and improper overinquisitorial questions to be answered, and the applicant should refuse for that reason to comply with the form, he could then raise the question of the propriety of those questions. A board of health may be given power to withhold a license to sell milk, if the place of business or the wagons or the vehicles be not "in a sanitary condition and fit and proper for the use and purpose to which they are intended to be put."

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Niagara Falls,, August 20-22.
Minnesota State Medical Association, Duluth, Aug. 14-15.

AMERICAN SOCIETY FOR THE ADVANCEMENT OF CLINICAL INVESTIGATION

(Fourth Annual Meeting, held in Atlantic City, May 13, 1913)

Study of the Question of Epinephrin in the Circulating Blood

DRS. T. C. JANEWAY and EDWARDS A. PARK, New York City: The contradictory results obtained by Batelli, Schur and Wiesel, Schlayer, Fraenkel, Kretschmer, Trendelenburg and others in their attempts to demonstrate epinephrin in the blood of normal and especially of nephritic individuals led to this study, which has been prosecuted during the past year. The method used has been a modification of the Meyer strip, testing each serum or blood simultaneously on a coronary and a peripheral artery preparation. This meets the criticism, raised by G. N. Stewart, that no substance can be said to contain epinephrin unless it be shown to give both its stimulating and its inhibitory reactions. Previous workers had used only one of these. Langendorff and others have shown that epinephrin dilates the coronary, as contrasted with all other arteries. One of us (Park) has confirmed these results and has shown that, by the Meyer method, dilatation of the coronary can be obtained with epinephrin in Locke's solution in dilutions as low as 1 in 50,000,000. This method—duplicate reactions with coronary and peripheral arterial segments—has the advantages over all previous methods of employing the mechanism it is desired to study, of sensitiveness and of freedom from disturbance by the viscosity of blood, which, for the frog-perfusion-method, necessitates dilution.

The result of all experiments with ox and human serum or defibrinated blood was an extreme constriction of both the coronary and the peripheral artery preparations, thus demonstrating clearly that the vasoconstrictor substance was not epinephrin. Since the publication of O'Connor's and, later, of Schultz's work, showing that this vasoconstrictor substance is not present in whole blood, but appears only after the formation of the clot, three experiments on uncoagulated human blood, diluted one-half with Locke's solution containing 1 per cent. sodium citrate, have been performed. Two with blood from normal individuals have entirely confirmed O'Connor's results with animal blood, no effect on either artery being obtained. One with blood from a patient with chronic nephritis and marked hypertension failed to give clear evidence of the presence of epinephrin. Epinephrin added to citrated human blood could be identified readily in low dilution.

It is clear, therefore, that, at the present time, proof of the existence of epinephrin in the circulating blood, exclusive of the blood of the suprarenal vein, has not been obtained by any experimenter.

Influence of Adrenals over the Pancreas

DRS. RALPH PEMBERTON and J. E. SWEET, Philadelphia: We have shown in work previously reported that intravenous injections of epinephrin inhibit the flow of pancreatic juice, whether this be caused by hydrochloric acid, normal chyme

or secretin. This inhibition may last some time after the blood-pressure has apparently returned to normal and is independent of the systemic blood-pressure. The removal of the adrenals from dogs otherwise normal induces a flow of pancreatic juice which may last for hours. This flow may occur with a fairly high systemic blood-pressure, though it generally occurs when the blood-pressure is low. The work now reported deals with a study of this flow of pancreatic juice which follows the removal of the adrenals, and leads to the following conclusions:

1. Injections of epinephrin made when the flow is at its height inhibit the flow.

2. Shortly after or before the blood-pressure falls to its previous level, the pancreatic flow returns. It can thus be repeatedly inhibited and it then repeatedly returns. The tendency to flow seems very strong.

3. Since removing the adrenals induces a flow, since injections of epinephrin then inhibit the flow and since the flow returns when the effect of the injection wears off (which last can be repeatedly demonstrated in one animal), it is difficult to escape the belief that one gland normally influences the other.

Effect on Growth of Feeding Anterior and Posterior Lobe of the Hypophysis

DR. JOSEPH L. MILLER, Chicago: Young white rats were placed in individual cages and each received daily a weigned amount of dried hypophysis mixed with cracker, the controls receiving the same amount of dried meat and cracker. Three groups of animals were fed in this manner for periods varying from sixty-eight to ninety days. In all, twenty-three rats were used. Seven of these received daily powdered anterior-lobe in amounts varying from 0.2 to 0.4 gm. Six received from 0.2 to 0.3 gm. daily of posterior-lobe. Ten were used as controls and received the same amount of powdered dried meat. The results were completely negative, both as regards weight and skeletal changes as shown by the *x*-ray. No disturbances were noted, the animals thriving in the same manner as the controls.

Clinical and Pathologic Observations on Subacute Bacterial Endocarditis

DR. E. LIBMAN, New York: During a study of eighty-nine cases of subacute bacterial endocarditis (so-called chronic malignant endocarditis) evidence was obtained that persons with this disease can spontaneously overcome their infection and that the lesion on the valves may heal in part or entirely. Altogether I have observed eleven cases of bacteria-free healing or healed lesions of subacute bacterial endocarditis. The cases in which I have found bacteria in the blood and which I could follow up all terminated in death. In one case of influenzal endocarditis the bacillus was found five times in the blood. Four later cultures were negative, and the patient died within a few months. There was unfortunately no autopsy. It is remarkable, then, that there should be so many cases in which the bacterial infection is overcome without its being discovered. The explanation that seems the most likely is that in such cases the bacterial infection is of short duration, and the patient does not feel sick enough to see a physician, and that, if he does, he is not put to bed. The patients who overcome their infections before we see them present four clinical pictures: 1. They develop a chronic nephritis and die of uremia. 2. They present the clinical picture of "chronic endocarditis with fever." 3. This group presents a clinical picture that seems to have been entirely overlooked. These patients develop a remarkable brown color of the face (to which I wish to draw particular attention), sternal tenderness, palpable spleen, slight temperature elevation and the evidences of a valvular lesion. The subsequent course of such patients is unknown. 4. They have a valvular lesion with marked anemia and die from exhaustion alone or combined with decompensation. Whether patients can recover entirely and have only the valvular lesion which they had before they were affected by subacute bacterial endocarditis can be determined only by further studies and possibly by complement-fixation tests.

Study with the Electrocardiograph of the Mode of Death of the Human Heart

DR. G. CANBY ROBINSON, New York City: Electrocardiographic records were obtained from seven cases at the time of death—two cases of poliomyelitis, four of lobar pneumonia and one case of pneumococcus meningitis. These records have been analyzed in order to determine the changes in the mechanism of the heart-beat at the time of clinical death in each case. Clinical death was considered to have occurred when respiration finally ceased, when no heart-sounds could be heard and when muscular relaxation and the general appearance of the patient indicated to the physician at the bedside that death had occurred. The patient was pronounced dead in each case without any knowledge of how the heart-beat was affecting the galvanometer.

Cardiac activity sufficient to give a definite record with the electrocardiograph may continue in the human heart for some minutes after clinical death has occurred from an acute infectious disease. In the seven cases described the cardiac activity continued from six to thirty-five minutes after all the usual clinical signs of death had occurred. In four cases the ventricular activity outlasted the auricular activity, in two cases this was reversed and in one case the two parts of the heart seemed to cease synchronously. Marked slowing of the rate of cardiac activity always occurred and there was usually distinct delay in the conduction time between auricles and ventricles. Complete dissociation was seen in three cases. Ventricular fibrillation occurred in two cases, in one of which the ventricles again established a regular rhythm. Evidence of auricular fibrillation was never seen. Characteristic changes in the ventricular electrical complex occurred in all cases. They consisted of a decrease in the size of the R wave and increase in the size of the T wave, and a tendency to a fusion of these waves. There was usually but little change in the duration of the ventricular complexes as the cardiac activity gradually ceased. The foregoing observations indicate that there is no one point in the human heart which may be considered as the *ultimum moriens*, at least when death occurs from an acute infectious disease.

Experimental Bronchopneumonia

DRS. MARTHA WOLLSTEIN and S. J. MELTZER, New York City: We have succeeded in producing experimental bronchopneumonia in dogs with cultures of streptococcus (twenty dogs) and influenza bacillus (eleven dogs), with positive results in every case. The pneumonic lesions were typically lobular in character. There were various features in the character of the lesions produced by these organisms which differed strikingly from the lesions caused by the insufflation of the pneumococcus culture. Especially was this the case with regard to the quantitative production of fibrin. In order to find out whether these differences are specific and due to the differences in the species of the organisms employed, or are merely an expression of the degree of virulence, we studied further in ten dogs the effect of insufflation of cultures of a non-virulent pneumococcus. All these animals had pneumonic lesions which were typically fibrinous or "lobar" in character, although the intensity of the reaction was somewhat less than in the reactions produced by cultures of a virulent organism.

The Nature of the Intoxication in Pneumonia

DR. RUFUS I. COLE, New York City: It is possible (1) that the intoxication in pneumonia may be due entirely to disturbances in the metabolism of the body, and the growth of the bacteria may be only an inciting factor in these disturbances; (2) that the intoxication arises from the breaking down of the exudate at the site of the local lesion. At present, however, we desire only to consider the possibility of the production of a poison by the pneumococcus, either within or outside of the body. Sufficient experiments have already been made to show that there is no active soluble toxin formed in the cultures of pneumococcus. Experiments to detect free poisons in the filtered blood of infected rabbits were negative. We then repeated and confirmed the experiments of Friedberger in relation to the production of the so-called anaphylatoxin with pneumococcus. Later Rosenow showed that acute intoxi-

cation could be produced in guinea-pigs by the injection of bacteria which had been allowed to undergo autolysis in salt solution. Similar observations were made by Neufeld and Dold. Our own results with this method of producing a poisonous substance from the pneumococcus were somewhat inconstant. In certain cases the autolyzed extract produced symptoms and death like that seen in anaphylactic shock, but in other cases the effect of such injection was slight.

In order to learn more in regard to the nature of the changes which the bacteria undergo and also to discover a method by which such poisonous extracts can be prepared more quickly and with great constancy, treatment of the bacteria with various chemicals was undertaken, but the results were not promising until we tried dissolving the bacterial bodies in dilute sodium cholate solution. It was found that such an extract of the bodies of the pneumococcus is extremely toxic when injected into rabbits and into guinea-pigs, and, furthermore, that the symptoms produced both in rabbits and guinea-pigs are exactly like those seen in acute anaphylactic shock in these animals after a second injection of horse-serum. In certain cases these symptoms have been produced by extracts which have been obtained by treating the pneumococci with a dilute sodium cholate solution for only ten minutes at 37 C. (98.6 F.), or half an hour at 4 C. (39.2 F.). Lately the view has been most generally held that the intoxicating substances obtained from the bacterial bodies arise by partial digestion of the protein substances of the bacterial bodies. While our experiments do not disprove this view, the short time and low temperature necessary for the setting free of the poison would rather suggest that the intoxicating substances are preformed in the bacterial cells and are set free on their dissolution. These experiments would therefore rather tend to support the older endotoxin theory of Pfeiffer. The toxic substance so obtained is labile, being destroyed at 60 C. (140 F.) for one hour.

AMERICAN PEDIATRIC SOCIETY

Annual Meeting, held at Hot Springs, Va., May 29-31, 1912

(Concluded from page 61)

The Dextrins and Maltose in Infant-Feeding

DR. THOMAS S. SOUTHWORTH, New York: In health the infant seems to take with about equal facility the three sugars most commonly employed in making up the deficiency of carbohydrates in diluted cow's milk, namely milk-sugar, cane-sugar and so-called malt-sugar. Although the advantages of malt-sugar or maltose have received wide recognition for purposes of restoring deficient nutrition in infants, there has been little appreciation of the rationale of its action. The terms "malt-sugar" and "maltose" are inaccurate and misleading. Pure malt is a rare product of the laboratory, too expensive for general use, and consequently never employed in infant-feeding; the commercial products to which this term has been applied are numerous, and it is doubtful whether any two of them have the same composition. The term embraces almost any preparation produced by the action of diastatic ferments on starch. Maltose is never administered without an admixture of dextrins, which latter, while capable of being further elaborated into maltose, and subsequently into dextrose, have, for the time being, very different chemical and physical properties. This association of dextrins with maltose is a matter of considerable importance and may be assumed to play a large part in the favorable effects of the malt preparations in disturbed conditions. Maltose is not liable to fermentation of certain types. Dextrin remains unfermentable in beer and is immune to fermentation in the intestine until reduced to assimilable maltose.

Maltose in Infant-Feeding

DR. JOHN LOVETT MORSE, Boston: Almost all sugars spoken of as malt are in reality combinations of maltose and dextrin. These sugars are all disaccharids. These are not absorbed as such from the intestines in normal conditions, but are first broken down into their respective monosaccharids by special ferments, maltase, saccharase, and lactase. These are formed in the mucous membrane of the small intestine. Maltose is the most quickly absorbed of the three saccharids and saccharose next. The disaccharids are all fermentable. It is of considerable importance, in order to maintain the normal fecal flora, to have a considerable amount of sugar in the food of babies fed on cow's milk mixtures. Lactose favors the development of *B. bifidus*, while maltose is especially conducive to the growth of *B. acidophilus*. Under normal conditions, therefore, lactose is preferable to maltose. There is more rapid gain in weight when maltose is added to food poor in sugar than when lactose is added, but this is of no importance since the gain in both instances is due to the retention of water; Finkelstein and Meyer add maltose to their *Eiweiss-Milch* after the disappearance of acute symptoms in order to prevent the child from suffering from loss of weight and lack of nutrition. The use of this treatment during the past year has convinced me that there is a variety of intestinal indigestion in infancy which is relieved by reducing the sugars and salts in the food to a minimum and giving large amounts of casein and that the giving of dextrin-maltose preparations can be begun before the patients can take lactose. This type of cases is characterized by a number of stools of diminished consistency, green in color, often frothy, acid in reaction, and not infrequently containing mucus and fat curds. Maltose is contra-indicated in the treatment of diarrhea due to the gas bacillus and similar organisms, and is less useful than lactose in the treatment of those caused by the dysentery bacillus.

DISCUSSION

DR. JOHN HOWLAND, St. Louis: We should do more work on the dextrins. The Germans think that the use of lactose in normal children is dangerous and support their argument by citing their experiments on puppies. However, the puppies that had rickets did well on this feeding; if they are fed on glucose they die, and if they are fed on saccharose alone they die. I cannot agree that lactose is dangerous in dysentery. In large quantities it increases the diarrhea and this should be remembered. The experimental reports showing lactose to be a useful mode of treatment must be accepted.

DR. ISAAC ABT, Chicago: I have been using malt preparations for some time and normal children do well on it, so far as gain in weight is concerned. All preparations belonging to the malt-dextrin group cause constipation and some substance should be added to counteract this tendency. Thus far the bacteriology of the intestinal tract is in too indefinite a state to warrant the drawing of any conclusions, much less can one prescribe sugar on the basis of the intestinal flora. We are giving too much attention to sugars alone. It seems to me that the normal child does equally well on malt-sugar, cane-sugar, and sugar of milk.

DR. ROWLAND G. FREEMAN, New York: The warning concerning the use of malt-sugar is timely. All babies should have a chance at normal feeding before being given the abnormal. There is a tendency to place children on malt foods because they grow faster. This class of proprietary foods is responsible for a large percentage of the cases of scurvy.

DR. L. EMMETT HOLT, New York: It is a fact that children fed on maltose develop scurvy. The use of lactose will overcome the constipation from which so many children suffer and the liquid preparations are better than the dried ones. In a recent study of certain sugars it was found that lactose and cane-sugar in solution are practically sterile, but that maltose preparations contain many pathogenic organisms. These organisms are killed only at a high temperature which changes the composition of the sugar. The use of cane-sugar is an advantage where malt-sugar and maltose are not tolerated in diarrheas. This is the secret of success in the use of condensed milk. In the main I agree with the conclusions drawn in the paper.

DR. L. E. LA FETRA, New York: The use of milk-sugar does harm in certain cases. Cases of diarrhea occurring among hospital patients have been found to improve when milk-sugar has been stopped and cane-sugar or one of the dextrin-malt preparations substituted. During the past ten

months I have been using cane-sugar together with the dextrin-malt preparations and have had good results. In cases with acid stools and a large amount of mucus and blood, it is a mistake to resume the use of milk-sugar too soon.

DR. HENRY COIT, Newark, N. J.: There is a chemical as well as a gross difference due to contamination between the commercial milk-sugar and mother's sugar of milk. The former contains bacterial toxins. It should be boiled before using.

DR. J. P. CROZER GRIFFITH, Philadelphia: A large number of cases of scurvy are caused by the use of malt preparations.

DR. ALFRED HAND, JR., Philadelphia: I have always felt that lactose tends to produce diarrhea. Where a child is obstinately constipated, lactose or saccharose has a tendency to regulate the bowels.

DR. THOMAS S. SOUTHWORTH, New York: Starch can be overused in feeding infants and one should be careful as to the amount used and also in regard to the diluents. I have used barley-water largely during the past decade in children who were not doing particularly well on other diluents. I agree with Dr. Abt that the effect of malt-dextrin mixtures is constipating rather than laxative; this is probably due to the extraction of fluid from the tissues.

DR. JOHN LOVETT MORSE, Boston: I have looked into the question of maltose in infant-feeding to find out the primary basis for the wave of this form of infant-feeding that is sweeping over the country. I cannot see a single reason for the use of milk-sugar. Chemically, contrary to the opinion often expressed, it is the same as mother's milk-sugar. Boiling milk-sugar may destroy the bacteria, but it does not seem to destroy the toxic products. During the summer of 1910, in Boston, maltose solutions were employed in the treatment of dysenteric diarrheas and it was felt that nothing but good resulted. It should be remembered that the bacteria we had to deal with might not be the same as those occurring in the diarrheas of children in other cities.

A Case of Retarded Development in a Boy Treated with Thymus Extract

DRS. CHARLES GILMORE KERLEY and S. P. BEEBE, New York: The patient was a boy, aged 16, who was mentally sound, but was undersized and whose penis was small and shrunken, testicles small and resting in the canal the greater part of the time although they could be brought down. At the end of nine months of hygienic and tonic treatment, there was no change in the condition of the sexual organs. Medication was stopped and 15 grains of thymus extract was given daily. During the first six months of this treatment the genitals perceptibly enlarged and after nine months' treatment the first erection occurred. At the completion of one year's treatment hair appeared on the pubis and in the axilla. The testicles have remained in the scrotum during the past six months and the sexual organs are apparently normal. The boy has gained one inch in height.

Serum Treatment of Pneumonia

DR. ROLAND G. FREEMAN, New York: On account of the usually favorable results of treatment with antipneumococcus serum it seemed worth while to try it in a series of cases, using alternate cases as controls The patients in the series showed high temperature with good chest signs. In none of the cases was there any evidence of irritation at the site of the injection. The serum was rapidly absorbed The injections were followed by urticaria, but without fever or general disturbance. The average age of the children injected was 20 months, of the controls 11 months. The effect in many cases was an immediate change in the appearance of the child. Children that looked septic in several cases after the injection had a good color, were brighter, took the feedings better and seemed much improved although the condition in the lung was unchanged or seemed to be spreading. In some cases the serum injections appeared to have no results, but in most cases there appeared to be a better reaction on the part of the child after injection than before. The reaction was usually followed by some reduction in leukocytosis and the percentage of polynuclear leukocytes increased. The pneumococcus serum presented a safe way of attempting to influence the course of pneumonia in children; the addition of antipneumococcus serum seemed to offer no advantage over the use of the pneumococcus serum alone.

DR. MATTHIAS NICHOLL, JR., New York: After a fairly large experience with pneumococcus serum in both children and adults it seems to me that one should give large doses of the serum, at least 100 c.c. In a recent attempt to immunize a series of diphtheria patients against secondary pneumonia there seemed to be no reduction in the death-rate from pneumonia through this attempt at immunization, and it was difficult, therefore, to have a great deal of faith in the curative value of a serum which had so little protective power against the organisms whose activities it was designed to control. In view of the fact that good results seem to follow the use of the serum in some cases, it is advisable to use it in prolonged cases which seem to be daily losing ground, but the dosage should be large. I have seen no bad effects from the administration of the serum even though the doses were very large. I prefer to give it intravenously, but 100 c.c. may easily be given subcutaneously.

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(Continued from page 58)

The Relation of Thyroidism to the Toxemia of Pregnancy

DR. GEORGE GRAY WARD, New York City: These cases may be classified into (a) cases having no Graves' disease, but without sufficient thyroid secretion to promote the increased metabolism in the liver made necessary by the pregnancy, and probably due to the failure of the thyroid to hypertrophy; (b) cases associated with Graves' disease, which usually causes serious disturbance in the metabolism. Toxemias of the first group are frequently much benefited by the administration of thyroid substance in the form of either the dry extract or the serum. In toxemias of the second group, it is essential to determine whether the Graves' disease is in a condition of hyperthyroidism or hypothyroidism. If the former, rest, application of ice, milk diet, and sedatives should be employed, and if these measures fail, an antiserum should be administered. If the latter, thyroid substance should be given in the form of the dry extract, or, what is more efficient, if possible to obtain, a saline extract prepared from normal human glands for hypodermic administration. Reliance should be placed on the nitrogen partition of the urine as a guide to the severity of the toxemia rather than on the blood-pressure. Induction of labor is very slow and uncertain in these cases, and where the history of former labors is that of dystocia, elective cesarean section is probably the safest method of delivery for both mother and child.

The Treatment of Acute and Fulminant Toxemia

DR. EDWARD P. DAVIS, Philadelphia: One fact stands out preeminently in all fatal cases of toxemia of pregnancy, and that is the disorganized state of the blood, the minute hemorrhages in the liver and other organs, and, when the toxemia lasts for some time, the occurrence of pulmonary edema and of gangrenous pneumonia. The value of milk as a prophylactic diet must be insisted on. A thorough physical examination should give warning of the approach of fulminant toxemia. Should the conditions be unfavorable for spontaneous delivery, and the uterus makes an effort to expel its contents, rapid delivery by abdominal section is the operation of choice. I prefer this to vaginal section because it is free from mechanical difficulty, and does not open the veins above the pelvis and lower portion of the birth canal.

Treatment of Eclampsia

DR. FRANKLIN S. NEWELL, Boston: Limitation of absorption of toxins is only to be accomplished by ending the pregnancy. The method of operative delivery must be chosen to suit the needs of the individual patient and skill of the obstetrician. Prevention of damage by toxins already absorbed should be undertaken, and the control of convulsions by the

free use of morphin to the point of slowing respiration to twelve per minute; also lowering of blood-pressure to approximately normal point by venesection in order to reduce the strain on the heart. Free catharsis should be induced by the use of salines and croton oil in repeated doses until several watery movements have resulted. The lower bowel should be washed out by colonic flushing. Probably most of the toxin is excreted by the intestinal tract, and if not removed it may be reabsorbed and cause a recurrence of symptoms. In these cases and in patients who have reacted badly to operative procedures, direct transfusion of blood should be considered as a possible life-saving procedure.

Discussion on Eclampsia

DR. GEORGE TUCKER HARRISON, Charlottesville, Va.: It is logical to maintain that in cases of acute toxemia in pregnancy, whether with or without eclamptic attacks, the indication for treatment is to empty the uterus as speedily as possible. Forceps should be applied only when the head is fixed in the pelvis. In the case of a primipara, when the cervix is maintained in its entire length, the indication is the vaginal cesarean section. Abdominal cesarean section should be reserved for cases of contraction of the pelvis.

DR. JOHN O. POLAK, Brooklyn, N. Y.: Before the formation of the placenta, the curet is the method of choice, and after this period anterior hysterotomy offers decided advantages. The preeclamptic state, not yielding to dietetic, eliminative and medicinal measures, justifies evacuation. When the convulsions and coma have occurred, the termination of pregnancy improves the chance of the patient's recovery, and the condition of the cervix determines whether delivery be by incision, bag or nature, supplemented by version or forceps. Finally, anterior hysterotomy should always be the choice over manual dilatation, where no effacement of the cervix has taken place.

DR. CYRUS A. KIRKLEY, Asheville, N. C.: To eliminate accumulated toxins, and to restore impaired or arrested function in the eliminative organs is the aim of treatment. Calomel and soda, followed by saline, alkaline diuretics, if not contra-indicated, the hot pack, the hot-air bath, glonoin, massage, pure air, and abundance of pure water are important aids in treatment. The uterus should be emptied as soon as it can be done without increasing the risk to the mother. While cesarean section should not be the *dernier ressort*, we should be absolutely sure that delivery by other means is impossible.

DR. REUBEN PETERSON, Ann Arbor, Mich.: If the patient fails to improve under the prophylactic treatment, the best method is to empty the uterus as quickly as possible.

DR. BARTON COOKE HIRST, Philadelphia: I have used parathyroid extract for five or six years, and I believe that in the rare types of toxemia I get better results than from the thyroid extract itself, but those toxemias that require parathyroid treatment are rare. I am strongly opposed to unqualified advocation of the operative treatment.

DR. RICHARD C. NORRIS, Philadelphia: My last thirty cases occurred during the period when vaginal cesarean section was discussed by the profession. Of these, there were thirteen actually eclamptic women who had had forty-two convulsions; there were seventeen preeclamptic cases past the seventh month of pregnancy. This group of cases was treated by the conservative plan. One woman died without eclampsia from a wide-spread accumulation of fluid in the serous cavities, chronic Bright's disease, and none of the infants died, most of them being premature.

DR. J. WHITRIDGE WILLIAMS, Baltimore: Vaginal hysterotomy or cesarean section is the method I have employed for some years to empty the uterus for the vomiting of pregnancy. In cases of eclampsia, it is very essential to individualize, but I believe in every case, in which the cervix is rigid, and in which prompt delivery is necessary, vaginal cesarean section is the operation of choice.

DR. CHARLES M. GREENE, Boston: When these patients are put under the usual eliminative treatment, very often labor begins and they deliver themselves and recover without ever having convulsions.

DR. HENRY D. FRY, Washington, D. C.: After putting the woman to bed and taking off all food by stomach and giving nutrient enemas I use inhalations of oxygen, and if I cannot stop pernicious vomiting, I am satisfied I should empty the uterus. If a primipara has a rigid cervix I believe in doing a vaginal cesarean section every time, and not abdominal cesarean section.

DR. GEORGE W. KOSMAK, New York City: It is not fair in the treatment of these cases to assume that convulsions are the deciding factors, and that is why I object to basing a series of statistics on the presence of convulsions.

DR. HUGO EHRENFEST, St. Louis: No matter what method of treatment is resorted to in these cases of toxemia of pregnancy, the patient should be put into a hospital. It is unsafe to resort to operative measures amid unfavorable surroundings. Conservatism should always be kept in mind in dealing with this class of patients.

(To be continued)

Current Medical Literature

American Journal of Public Health, New York

May, II, No. 5, pp. 315-398

1 Regulation of Marriage. J. N. Hurty, Indianapolis.
2 *Bacterial Contamination of Bread. K. Howell, Chicago.
3 Conservation of Food Products by Refrigeration. P. H. Bryce, Ottawa, Canada.
4 Method for Bacteriologic Standardization of Disinfectants. T. Ohno and H. C. Hamilton, Detroit.
5 Typhoid in New York City, Together with Methods Found Serviceable in Studying Its Occurrence. C. F. Bolduan, New York.
6 *New Method for Disinfection of Tuberculous Sputum. W. R. Stokes and W. N. Schmidtz, Baltimore.
7 Practical Modification of Winslow Dirt Filter. M. C. Schroeder, New York.
8 Inexpensive Outfit for Collection of Bacterial Milk Samples. F. O. Tonney, Chicago.

2. Bacterial Contamination of Bread.—With the plan of determining the degree of bacterial contamination of the outside of bread, 100 loaves were collected by Howell from varous districts in the north, south and west sides of Chicago. The loaves were about the same size, ranging from 345 to 375 gm. They were oblong in shape. The exposed surface was, therefore, about the same in all the loaves. The shops from which the samples were chosen differed greatly in conditions of sanitation. There was every degree of cleanliness from the clean shop where the bread wrapped in oiled paper was kept in glass cases, to the dirty shops where the bread was kept on a counter, far from clean, freely exposed to dust, flies and to handling by the customers. Each loaf of bread was taken to the laboratory as wrapped when purchased, since this imitated the conditions under which the bread would ordinarily be used. The entire loaf was then swabbed with wet sterile cotton and the cotton thoroughly rinsed in 10 c.c. of sterile water. From this suitable dilutions were made.

The mediums used in the experiments were gelatin, lactose-litmus-agar and lactose broth. The gelatin plates of the first fifty loaves were incubated at exactly 20 C. for seventy-two hours, those of the last fifty at room temperature (which was practically 20 C.) for seventy-two hours, and the lactose-litmus-agar plates at 37 C. for twenty-four hours before making the colony count. The count was much lower when the bread was kept under clean conditions than when the conditions were dirty. All acid colonies were picked and special search made for *B. coli* and streptococci. These were chosen as types, since they are both common and give some indication as to the cleanliness of conditions. *B. coli* was isolated from three loaves. Two of these loaves were purchased in very dirty shops. The third loaf came from a fairly clean store. Streptococci were isolated from thirty samples.

6. Disinfection of Tuberculous Sputum.—The new method of disinfection for tuberculous sputum, which Stokes and Schmitz have found serviceable, rests on alkaline solution of sodium hypochlorite (antiformin) as its basis. The advantage in using this material consists in the quick solution of the mucus and pus contained in the material disinfected.

Various quantities of phenol and lysol have been added to pure antiformin and it has been found that smaller percentages of these disinfectants will destroy the tubercle bacillus in sputum when used in combination with antiformin than when simply dissolved in water. The antiformin by dissolving the mucus seems to allow the antiseptics to come into direct contact with the tubercle bacilli, and the authors believe that this method possesses this advantage over the ordinary solutions of disinfectants used for destroying the tubercle bacilli practically in sputum. It was found that a 3 per cent. solution of phenol in the entire mixture of sputum and antiformin representing a 6 per cent. solution of the phenol in the antiformin itself would destroy the bacillus of tuberculosis in half an hour and a similar strength of lysol killed the tubercle bacillus in two hours. Equal quantities of the sputum and antiformin solution were mixed so that the 6 per cent. solution in antiformin would represent a 3 per cent. solution in the mixture of antiformin and sputum. The viability of the tubercle bacillus was tested by subcutaneous injections into guinea-pigs.

Ophthalmic Record, Chicago

June, XXI, No. 6, pp. 276-329

9 Case of Gumma of Eyelid. C. A. Clapp, Baltimore.
10 Orbital Cellulitis; Report of Case. F. Holdsworth, Traverse City, Mich.

American Journal of Orthopedic Surgery, Philadelphia

May, IX, No. 4, pp. 527-755

11 Care of Crippled Children in United States. D. C. McMurtrie, New York.
12 *Treatment of Volkmann's Ischemic Paralysis and Contraction by Method of Robert Jones. R. H. Sayre, New York.
13 *So-Called Benign Cyst of Bones. D. Silver, Pittsburgh.
14 *Treatment of Flexion and Adduction Deformity of Thigh by Changing Angle of Femoral Neck. A. O'Reilly, St. Louis.
15 Dyschondroplasia. C. E. Coon, Syracuse, N. Y.
16 Roentgenologic Study of Some Brittle Bones. R. Hammond, Providence, R. I.
17 Exercise Treatment of Paralysis. C. H. Bucholz, Boston.
18 *Treatment of Spinal Curvatures. E. H. Bradford, Boston.
19 Scoliosis and Its Treatment. R. W. Lovett and J. W. Sever, Boston.
20 Pelvi-Thoracic Triangle as Means of Recording Scoliosis; a Scoliometer. R. O. Meisenbach, Buffalo.
21 *Removable Plaster Corset for Structural Scoliosis. D. Silver, Pittsburgh.

12. **Volkmann's Ischemic Paralysis.**—Volkmann's ischemic paralysis is regarded by Sayre as being the result of a myositis set up by obstruction to the supply of oxygen by pressure either by bandages, splints or sometimes by position and pressure of bone fragments. Shortening of the affected muscles results, the muscles of the forearm being those usually affected, those of the hand occasionally. Massage is too intermittent to produce good results. Shortening of the bones and removal of scars pressing on nerves have given good results. He believes that Jones' method of constant traction on contracted muscles produces results when massage fails as it is a constant instead of an intermittent force. In some cases bone growth at a faster rate than muscle growth may cause recurrence of deformity in a way analogous to the recurrence of equinus in cases of paralysis of the leg and a second stretching may then be necessary.

13, 14, 18 and 21. Abstracted in THE JOURNAL June 17, 1911, pp. 1845, 1846 and 1847.

Journal of Tennessee State Medical Association, Nashville

June, V, No. 2, pp. 49-92

22 Membranous Pericolitis and Allied Conditions of Ileo-Cecal Region. J. N. Jackson, Kansas City, Mo.
23 Research on Heredity. W. St. John, Bristol.
24 Management of Syphilis. W. F. Glenn, Nashville.
25 Etiology of Diabetic Glycosuria. W. K. Vance, Bristol.

Journal of Infectious Diseases, Chicago

May, X, No. 3, pp. 259-456

26 *Changes in Influenzal Pneumonia. D. J. Davis, Chicago.
27 Biometric Study of Milk Streptococci. J. Broadhurst.
28 Classification of Streptococci by Their Action on Carbohydrates and Related Organic Media. C. E. A. Winslow, New York.
29 *Experimental Therapy of Rocky Mountain Spotted Fever. P. G. Heinemann and J. J. Moore, Chicago.
30 Experiments on Disinfection of Water with Ultra-Violet Light, with Laws of Disinfection. M. R. Scharff, Birmingham, Ala.
31 *Action of Antistreptococcus Serum in Streptococcus Infections in Man. G. H. Weaver and R. Tunnicliff, Chicago.
32 *Transmission of Immunity from Mother to Offspring; Study on Serum Hemolysins in Goats. L. W. Famulener, New York.
33 *Properties of Desiccated Rabies Virus and Its Use in Antirabic Immunization. D. L. Harris, St. Louis.
34 *Calcium Salts and Onset of Labor. J. H. Kastle and D. J. Healy, Lexington, Ky.
35 *Development of Proteolytic Ferments in Blood During Pneumonia. G. F. Dick, Chicago.
36 Outbreak of Typhoid in Cedar Falls, Iowa. A. L. Grover, Iowa City, Iowa.
37 Comparative Toxin Production in Diphtheria Strains. J. L. Berry and L. P. Blackburn, New York.
38 Non-Variability of Diphtheria Bacilli. J. L. Berry and E. J. Banzhaf, New York.
39 *Concentration of Antistreptococcic and Antigonococcic Sera. P. G. Heinemann and L. C. Gatewood, Chicago.
40 Effects of Chemicals on Division Rate of Cells, with Special Reference to Possible Precancerous Conditions. G. N. Calkins, F. D. Bullock and G. L. Rohdenburg, New York.

26. **Changes in Influenzal Pneumonia.**—Davis holds that influenzal bronchopneumonia occurs in a large proportion (78 per cent.) of all patients dying of influenzal meningitis. As a rule it develops early and may precede the appearance of the meningeal symptoms. The influenza bacilli are found in the lung and bronchial exudate but usually mixed with a smaller number of other organisms (streptococci, pneumococci, etc.). The lungs are probably the atrium of infection in many cases though not in all. The pneumonia is always lobular in character and does not appear to differ morphologically in any essential respect from the lobular pneumonia commonly associated with the respiratory type of influenza or from that associated with other acute infectious diseases.

29. **Rocky Mountain Spotted Fever.**—Horses are susceptible to spotted fever if the virus of guinea-pigs is injected subcutaneously and intravenously. The fever usually takes a mild course and the temperature is not exceedingly high. Normal temperature appears again after seven to nine days. It should be interesting to allow infected ticks to bite horses and determine whether the disease can be communicated in that way. The serum from horses recovered from spotted fever has a protective value. The potency is largest after about twelve days from the time of the reappearance of normal temperature. Repeated injection of spotted fever virus increases the potency of the serum materially, but does not produce a second attack of spotted fever. The serum can be concentrated by the method practiced in concentrating diphtheria antitoxin. The gain in potency may be ten times the original value. The pseudoglobulin fraction of blood-serum contains the bulk of antibodies in immunized horses.

Assuming 0.1 c.c. of guinea-pig virus to be the smallest amount which will invariably produce spotted fever in guinea-pigs, 1 c.c. of a serum was protective against 1,000 doses. Guinea-pigs injected with spotted fever virus and immune horse serum separately into the peritoneal cavity acquire an immunity lasting for at least four weeks. One c.c. immune horse serum protects guinea-pigs injected with spotted fever virus up to, and including, the first day of high temperature. If serum is given later there is no protection. Treatment of guinea-pigs, injected with spotted fever virus, with sodium cacodylate and repeated every day, commencing with the first appearance of temperature, has no effect on the course of the disease.

31. **Streptococcus Infections in Man.**—Alterations in the streptococcus opsonin and in the phagocytic activity of the leukocytes subsequent to injections of antistreptococcus serum were studied by Weaver and Tunnicliff in six cases of erysipelas, two cases of septic scarlet fever and two cases of chronic otitis following scarlet fever. The former eight cases were of a severe type and selected as being likely to run unfavorable courses. All of the six cases of erysipelas terminated in recovery and visible improvement usually began about twenty-four hours after the serum was given. The improvement was shown by falling temperature, recession of the local swelling, subsidence of delirium and betterment in the general condition. In short, the impression on the observers was that recovery was more rapid than could be expected in the usual course of the disease in similar cases. That the rapidly favorable outcome was not accidental was further indicated by the concurrent increase of streptococcus opsonin above that observed in untreated cases. The serum was administered to

two patients with septic scarlet fever. In each there was a leukocytosis and in each the leukocytes showed increased phagocytic activity before the injection. In each, the opsonic index was subnormal, but rose after the serum was injected, and with this rise the temperature fell and the general condition improved. Both patients were desperately sick with a very bad outlook before the serum was given and both made as rapid and complete a recovery as occurs usually in untreated cases of moderate severity.

In two cases of chronic suppurative otitis media following scarlet fever in which cultures from deep in the ear yielded streptococci in almost pure growth, a single injection of 60 c.c. was given. Both children had received diphtheria antitoxin several weeks before and they both developed a severe serum reaction a few hours after the injections. In each case the opsonic and cytophagic indexes rose very considerably and remained elevated several days. The effect on the aural discharge was not pronounced.

The authors have not found that the injection of serum produces an increase in leukocytes. However, a leukocytosis already present falls after the administration of the serum as symptoms abate. The increased activity of the leukocytes following the serum injections does not appear to be specific, as the authors had thought probable in their former study in guinea-pigs. Most of the injections have been made into the muscles to facilitate rapid absorption. No untoward effects were noted after such injections. In very urgent cases the intravenous injection should be considered as likely to yield the quickest results.

32. **Immunity Transmission from Mother to Offspring.**—To summarize briefly the principal results of Famulener's experiments, it was found that goats actively immunized against sheep blood-corpuscles during gestation passively transmitted the specific hemolysin to their young. The colostrum was the chief agent in bringing about the passive immunization of the suckling. Sucklings which got the colostrum and first milk rapidly acquired a relatively high antibody content in their blood, which was well retained. When the immunization was done during the period of gestation the colostrum contained a high content of specific hemolysin, often much higher than the adult's serum, at time of parturition. The hemolytic antibodies rapidly disappeared from the milk after the mother had been suckled by the young. The blood taken from the newly-born before they were permitted the antibody colostrum showed no appreciable amount of hemolysin by the test used. The placenta played a minor rôle in the passage of hemolysins to young before birth, practically negligible in most cases. Mother goats, actively immunized against sheep-blood-corpuscles immediately after birth of their young, failed to transmit any demonstrable immunity to their suckling young. The milk, in some cases, contained no demonstrable hemolysins, but in others showed fairly large amounts. Apparently a very high degree of immunity is necessary before appreciable amounts of antibodies are excreted through the milk. Older sucklings apparently did not absorb the antibodies in an unchanged condition. The young animals (kids) did not respond to any extent in production of hemolysins following subcutaneous injections of foreign blood-cells (sheep).

33. **Properties of Desiccated Rabies Virus.**—Harris holds that rabic material may be completely desiccated without destruction of virulence, provided the dehydration takes place at a low temperature. The lower the temperature, the greater will be the amount of virulence preserved. The desiccated virus contains per weight as much infectivity as the fresh virus. The loss of virulence is so slow that the material may be standardized, permitting an accuracy of dosage hitherto impossible. The unit is the smallest amount which, when injected intracerebrally into a full grown rabbit, will produce paresis on the seventh day. The use of desiccated virus in antirabic immunization of animals and persons offers many advantages over other methods.

34. **Calcium Salts and Onset of Labor.**—It is evident from experimental results obtained by Kastle and Healy that under certain conditions, at least, and so far as they have been able to ascertain under normal conditions of pregnancy, calcium salts in the amounts and at the concentrations indicated are specific in giving rise to premature onset of labor in pregnant guinea-pigs, within a very short interval following their administration intraperitoneally. In the light of Bell and Hick's observations they do this by causing a rhythmical, expulsive contraction of the pregnant uterus. The fact also that potassium lactate, though greatly slower in its action, can accomplish the same thing is also a matter of interest. That sodium lactate, in the amount and at the concentration employed, does not bring on the onset of premature labor in the pregnant guinea-pig, is what one might naturally be led to expect from the general inertness of small amounts of sodium salts in the animal organism. The fact also that magnesium lactate, in the amount and at the concentration employed, is powerless to bring on the onset of labor is also what one would be led to anticipate from the work of Meltzer and Auer on the physiologic action of magnesium, which, in the form of its soluble salts, greatly inhibits many vital processes and causes complete relaxation, general anesthesia and ultimately death. Thus far fresh, normal colostrum from a healthy cow has failed to bring on the onset of labor in the pig that received the magnesium lactate, indicating possibly a protective action on the part of the magnesium against the calcium salts of the colostrum.

35. **Proteolytic Ferments During Pneumonia.**—Proteolytic ferments were found by Dick to develop in the blood during pneumonia about the time of crisis. These ferments seem to have special action on pneumococcus protein and may take part in the mechanism of the crisis.

39. **Antistreptococcic and Antigonococcic Sera.**—The results of the work done by Heinemann and Gatewood show that antistreptococcic sera and antigonococcic sera can be concentrated by the same method as diphtheria antitoxin. The globulin solution may have a potency of 3 to 5.6 times the potency of the original serum, as measured by the opsonic index. They have also shown that in these sera the chief amount of antibody is united with the globulin fraction of horse blood, the same as in diphtheria and tetanus antitoxins and with the antibodies to Rocky Mountain spotted fever. The clinical efficiency of the concentrated sera is being tested and the results will be published later.

Journal of Oklahoma State Medical Association, Muskogee

June, V, No. 1, pp. 1-43

41 Eugenics. A. B. Montgomery, Muskogee.
42 Osteomyelitis of Acute Infective Variety. C. von Wedel, Oklahoma City.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

June, IV, No. 12, pp. 209-231

43 Clinical Study of High Blood-Pressure. A. W. Hewlett, Ann Arbor, Mich.

New York State Journal of Medicine, New York

June, XII, No. 6, pp. 277-340

44 Prevention of Blindness and Instruction of Blind Child. G. E. deSchweinitz, Philadelphia.
45 Prevention of Deafness and Instruction of Deaf Child. G. H. Makuen, Philadelphia.
46 *Movement for Prevention of Tuberculosis in This State. H. Folks, New York.
47 Prevention of Insanity. A. W. Ferris, Watkins.
48 Occupational Diseases of Ear, Nose and Throat. W. S. Bryant, New York.
49 Water-Trap Stomach; Diagnosis, Symptomatology and Treatment. G. R. Satterlee and L. T. Le Wald, New York.
50 Acute Poliomyelitis. G. Draper, New York.
51 Diagnosis of Epidemic Poliomyelitis in Preparalytic Stage. R. F. Kennedy, New York.
52 Pathology of Acute Poliomyelitis. F. W. Peabody, New York.
53 Treatment of Infantile Spinal Paralysis. D. E. Hoag, New York.
54 *Prevention and Correction of Deformities by Mechanical Treatment. W. R. Townsend, New York.
55 Surgical Treatment of Deformities and Disabilities Following Poliomyelitis. H. L. Taylor, New York.
56 *Rupture of Kidney in Children. C. L. Gibson, New York.
57 Value of Municipal Control of Child Hygiene. S. J. Baker, New York.
58 Real Things in Health Officer's Life. R. L. Crockett, Oneida.
59 Cooperation. C. F. Abbott, Elmira.

46. **Prevention of Tuberculosis.**—The time has come, in Folks' judgment, when legislation should be had requiring the employment in every city and town of the state, paid from public funds, of a visiting nurse, for each suitable number

of population. The New York State Grange, representing more than 100,000 farmers, recently adopted a report recommending the employment by local granges of visiting tuberculosis nurses until such time as they could be taken over by the local public authorities. The State Federation of Women's Clubs, representing 223,000 members, has undertaken similar work in a number of the cities and villages. These straws indicate the direction in which the wind is blowing. It is a short step from the performance of public health work by such large and influential groups to its assumption by the largest group of all, the people of the respective cities, towns and villages of the state. The indirect contribution to the public health movement made by the tuberculosis campaign may easily prove to be its most important results. From the numbers of dispensaries, visiting nurses and hospitals already provided or under way, Folks says, they are now able to hold out definite encouragement that, if they keep of good courage, continue to increase the number of active supporters of the movement, and do not lose any of their enthusiasm or determination, they shall, by the end of 1915, be able to announce "No uncared-for tuberculosis in 1915."

54. **Correction of Deformities.**—Townsend believes that practically all of the deformities following poliomyelitis can be prevented by appropriate treatment. Deformities may occur very soon after the attack. The prevention of the primary deformities tends to greater degree of recovery and prevents the secondary deformities. The early orthopedic treatment of the after-effects of poliomyelities gives better results than do other forms of treatment, and will enable one more satisfactorily to perform, when indicated, the various operations devised for these cases, and the large number of operations now necessary to correct deformities, in the future will be greatly reduced.

56. **Rupture of Kidney in Children.**—Attention is called by Gibson to the fact that rupture of the kidney in children is probably commoner than generally estimated; that the lesion is frequently severe, consisting of a complete division of the kidney into unequal halves; that shock and other symptoms may be slight and out of proportion to the gravity of the lesion; that operative interference should be more freely employed and gives good results. Gibson would refrain from immediate operation in (a) all milder cases, presenting no one symptom of any severity and giving a history of injury which is presumably of no great violence; (b) cases of generalized injury with a very bad general condition and absence of urgent kidney symptoms. For the latter class he would urge an exploratory operation with an appreciable increase of any or all symptoms at an early date. Operation in some form, then, is indicated for all milder cases that show a tendency to increase their symptoms and for all other cases, barring those falling in class B. Gibson's attitude in the border-line cases would be, when in doubt operate, believing that by such a routine measure we will not let some seemingly mild case slip through our fingers. As regards the time of operation, in general one should operate as early as possible, but if the main symptom is not that of an increasing anemia (repeated examinations of the hemoglobin) one might well occasionally give the patient a few hours to pull himself together, though such a delay should not be entertained if there are associated intraperitoneal injuries calling for prompt relief.

Bulletin of American Academy of Medicine, Easton, Pa.

June, XIII, No.3, pp. 127-164

60 Teacher's Relation to Health Supervision in Schools. E. B. Hoag, Berkeley, Cal.
61 Classification of Feeble-Minded Based on Mental Age. A. C. Rogers, Faribault, Minn.
62 School Nurse. F. Allport, Chicago.
63 Importance of Early Recognition of Surgical Affections in Children. C. D. Lockwood, Pasadena, Cal.

Virginia Medical Semi-Monthly, Richmond

June 21, XVII, No. 6, pp. 133-156

64 How May at Least 100,000 Babies Be Saved from an Untimely Death Each Year and So Lessen Present Fearful Infant Mortality in This Country? E. M. Sill, New York.
65 *New Diet for Typhoid. W. W. Garton, Norfolk, Va.
66 *More Liberal Diet in Typhoid. C. R. Grandy, Norfolk.
67 Gynecologic Diagnosis. C. R. Robins, Richmond.
68 Iodin Sterilization. C. C. Hubbard, Farmer, N. C.

65. **Published in *Military Surgeon*** for March and abstracted in THE JOURNAL, April 6, p. 1037.

66. **Liberal Diet in Typhoid.**—The following diet is given by Grandy: 1. Fluids. 2. Milk, buttermilk, malted milk, whey, junket, plain ice-cream, blanc mange, milk-toast (without crust), soft crackers, cocoa, broths, rice, lactose, eggs (soft boiled or raw), finely minced chicken. 3. Steak, chop, white meat or chicken (in small quantities), toast, bread, cereals, crackers, eggs in any form, mashed potatoes, tomatoes (strained), stewed fruits, oysters. Patients must be told to chew all food well. He generally starts the patient on milk for a day or two and then adds one extra article to the diet each day so that he can watch the effect of each on the symptoms. Thus he first adds a heaping tablespoonful of milk-sugar to each glass of milk and the next day he can try an ounce of cream, which will bring up the calories to 2,000 a day, or if he adds two tablespoonfuls of milk-sugar to each glass, which is seldom objectionable, he get 2,400 calories a day. Next he adds milk-toast or crackers, using the same preparation of milk, milk-sugar and cream to moisten, though Grandy never objects to the patient eating these articles dry if the crust is cut from the bread. Then bread and butter are added, then eggs, either raw, soft-boiled or in a custard made with milk-sugar, such a custard made after Coleman's recipe amounting to 360 calories, or a raw egg can be stirred in a cup of cocoa. Sweeten everything with milk-sugar, for in that way one can get in a very large amount of nourishment without making it nauseatingly sweet. Thus, a saucer of ice cream can be made to give 500 calories and an orange albumin raised from 50 to 100 calories or more. Sandwiches of scraped beef or finely cut chicken can often be advantageously given a typhoid patient. In the patients Grandy has had on this diet he has had little emaciation, no hunger, shorter convalescence and an apparent avoidance of relapses, which occurred rather frequently last year in patients fed in the old way.

Therapeutic Gazette, Detroit

June 15, XXXVI, No. 6, pp. 381-456

69 Treatment of Seasickness; Report of Twenty-Two Cases Treated by Veronal. I. W. Brewer, U. S. Army.
70 Dilatation of Prostatic Urethra for Relief of Symptoms of Prostatic Enlargement. E. H. Siter, Philadelphia.
71 Administration of Anesthetics, with Special Reference to Chloroform and Ether Anesthesia. W. P. Burdick, Kane, Pa.
72 Untoward Effects of Salvarsan Referable to Eye and Ear. S. L. Oisho, Philadelphia.

New Orleans Medical and Surgical Journal

June, LXIV, No. 12, pp. 881-964

73 *Effect of Ipecac, Phenol and Salicylic Acid on Amebæ *in Vitro*. R. Lyons, New Orleans.
74 Rush Section Diagnosis as Aid to Surgeon. W. H. Harris, New Orleans.
75 New Orleans Schoool of Tropical Medicine and Hygiene. C. Wellman, New Orleans.
76 Modern Sanitation. O. Dowling, Shreveport, La.
77 Diagnostic Value of Reaction Following Intravenous Injection of Salvarsan. A. H. Cook, Hot Springs, Ark.
78 Pericolitis. C. D. Simmons, Kansas City, Mo.

73. **Ipecac, Phenol and Salicylic Acid Action on Amebas.**—Lyons' experiments with ipecac on amebas *in vitro* fail, thus far, to explain its clinical value in the treatment of amebic dysentery. In a few experiments ipecac apparently possessed slight inhibitive power on the amebas, but the results were not sufficiently marked to warrant any definite conclusion. Lyons suggests that it is possible that the action of the ipecac is dependent on some specific change which it undergoes after ingestion into the body. On the other hand, it is highly probable that the amebas grown on artificial media are not the *Entameba histolytica* and may therefore be more resistant to the action of the ipecac. The experiments with phenol show that it has no effect on amebas except in comparatively strong solutions. Its action is chiefly on the symbiotic bacteria. From a clinical point of view the action of phenol is unimportant.

Experiments with salicylic acid revealed a marked destructive action on amebas in dilutions up to 1 to 5,000. Above this point some slight inhibitive effect on their growth was demonstrated in dilutions as high as 1 to 10,000. It is also strongly bactericidal. This marked effect of salicylic acid on

amebas is an additional reason for the administration of ipecac in salol-coated pills in preference to other coatings (e. g., keratin) or methods, as it is well known that salol is broken up into its two constituents in the intestinal tract, yielding about 64 per cent. of salicylic acid. Lyons suggests also the use of salicylic acid as an irrigating fluid in amebic dysentery, in watery solutions of 1 to 4,000 to 1 to 1,000 strength.

Journal of Maine Medical Association, Portland

June, II, No. 11, pp. 815-859

79 Modern Obstetrics. E. P. Davis, Philadelphia.
80 Cerebrospinal Fluid in Nervous Diseases of Syphilitic Origin. H. W. Hall, Augusta.
81 Therapy in Nephritis. R. A. Parker, Auburn.

Journal of Michigan State Medical Society, Battle Creek

June, XI, No. 6, pp. 327-400

82 Treatment of Diphtheria Bacilli Carriers. M. L. Holm, Lansing.
83 *Resumé of Typhoid and Its Treatment, Based on 400 Cases in South Haven's Epidemics. F. C. Penoyer, South Haven.
84 Clearer Diagnosis and Simpler Treatment. L. N. Eames, Muskegon.
85 Clearing Our Skirts of Suspicion of Medical Graft. C. M. Williams, Alpena.
86 Peep Into Medical Antiquity. N. H. Kassabian, Coopersville.
87 Auto-Intoxication. B. A. Shepard, Kalamazoo.

83. **Typhoid.**—Cold colonic flushes for reduction of temperature in typhoid are recommended by Penoyer. He uses a small colon tube inserted with care just well through the sphincter muscle, 1 to 3 pints of water, temperature 40 to 50 F., passed in small quantities into the colon and allowed to return through the tube. This may be repeated every four to six hours if the temperature reaches 105 F. and is not reduced by the sponge. He has used the method more or less in a considerable number of cases with good results, but only in those severe cases in which one might expect hemorrhage and other serious complications and has seen no bad effects from its use.

Delaware State Medical Journal, Wilmington

June, III, No. 7, pp. 1-24

88 Diagnosis and Treatment of Some Common Skin Diseases. J. W. Bastian, Wilmington.
89 Chronic Gonorrhea. J. B. Rutherford, Wilmington.

Journal of Kansas Medical Society, Kansas City

June, XII, No. 6, pp. 209-254

90 Bladder and Uterine Prolapse. J. T. Axtell, Newton.
91 *Medical Dogma and Orthodoxy. F. A. Carmichael, Goodland.
92 Typhoid Carriers. S. E. Greenfield, Topeka.
93 Acute Infection of Frontal Sinus. H. B. Caffey, Pittsburgh.
94 Version; Report of Case. E. A. Reeves, Kansas City.
95 Medical Education in Kansas. S. C. Emley, Kansas City.

91. **Medical Dogma and Orthodoxy.**—Carmichael urges that physicians take a greater and more active interest in their medical societies, that they be willing to devote time and talent to their support: Become an active member, he says, bringing into the society for discussion, the fruits of independent thought, for every worker in the great field of medicine should be an independent thinker and should cultivate that quality of logic that will enable him to champion his views and opinions by sound argument. In this way only, he continues, may we be considered an active unit in the great scheme of medical progression. We must not be content to merely follow, meek disciples of the thoughts and theories of others, but should recognize the fact that precedent is not progress, that it is not always a help, but quite frequently a hindrance. It is better to have our professional friends annihilate our pet theories and throttle our pet hobbies and then hold a respectable wake over the remains than to have blundered through our allotted days without our minds having conceived an original thought or our voices been raised in a single sentence out of strict conformity with public opinion. Therefore, let us all meet in the spirit of true fraternity and mutual helpfulness. Let us bring our theories, beliefs and opinions, the children of our individual mental efforts, that they may receive their baptism of approval from our colleagues, if they be found worthy, or be given at the hands of this society the last sad rites accorded the worthless and fallacious. Who among us wishes to carry enthroned in his confidence, the mummified fetus of an erroneous theory? Who wishes to be the parent of a mental "monster par defectum?"

St. Paul Medical Journal

June, XIV, No. 6, pp. 237-324

96 Graduate Instruction in Medicine. L. B. Wilson, Rochester, Minn.
97 Practical Points in Anesthesia. F. J. Sykora, Brainerd, Minn.
98 Some New and Important Tests for Examination of Milk. E. Klaveness, Sioux Falls, S. Dak.
99 Treatment of Tuberculous Lymph Nodes. J. C. Stewart, Minneapolis, Minn.

Journal of Nervous and Mental Disease, Lancaster, Pa.

June, XXXIX, No. 6, pp. 361-432

100 *Dysbasia Lordotica Progressiva; Dystonia Musculorum Deformans; Tortipelvis. J. Fraenkel, New York.
101 Four Interesting Cases of Emotional Dream State from Psychiatric Wards of Royal Charité Hospital in Berlin. W. J. S. Powers.
102 Three Cases of Tumor of Frontal Lobes. R. T. Edes, Reading, Mass.

100. **Dysbasia Lordotica Progressiva.**—This condition is described as follows: It occurs in children and young adults of the Jewish race and consists essentially of (a) a deformity around the pelvis, and (b) of tonic and clonic myospasms of the musculature around the pelvic girdle associated or not with similar twitchings of other muscles. The difficulty begins frequently with slight symptoms in the upper extremities; but wherever it begins the lower extremities are permanently and severely affected; the musculature of the thigh, pelvis and lumbar part of the vertebral column. In the reclining position most of the symptoms disappear, except a variable degree of deformity around the pelvis. Attempts to stand, particularly to walk, activate the condition. A marked lordosis of the lower dorsal and upper lumbar parts of the vertebral column, with inclination of the pelvis and particular prominence of the buttocks, are, as it were, the stigma of the condition. The most characteristic disturbance is noticed in the gait of these patients, resembling the locomotion of a quadruped; best described as "monkey gait," "dromedary gait." During locomotion the attitude changes continuously, getting clownish in character; the patient soon shows evidence of strain, the face flushes, the pulse-rate is increased and profuse perspiration sets in. In the recumbent position most of the deformities disappear, particularly the lordosis, but the legs even in the supine position do not get entirely relaxed.

Oppenheim believes that it is a disturbance of the coordination of muscle tone, with a state of essential hypotonia. The etiology of the disease is unknown; it runs a chronic progressive course and treatment has no influence. Various methods show transient benefit. Fraenkel reports four cases.

Laryngoscope, St. Louis

May, XXII, No. 5, pp. 707-796

103 Local Anesthesia in Oto-Rhino-Laryngology. H. Luc, Paris, France.
104 Malignant Tumors of Tonsil. J. Mathews, Rochester, Minn.
105 Operation of Tonsillectomy as Performed in Ancon Hospital. H. V. Dutrow, Ancon, Canal Zone.
106 Salpingian Curette. S. Yankauer, New York.
107 "L" Incision in Submucous Resection of Nasal Septum. E. F. Garraghan, Chicago.

Lancet-Clinic, Cincinnati

June 22, CVII, No. 25, pp. 667-694

108 Laboratory Diagnosis of Malignant Tumors. P. G. Woolley, Cincinnati.
109 Prevention of Scarlet Fever and Diphtheria. G. B. Twichell, Cincinnati.
110 Relation of Orthodontia to General Health and Development of Child. F. S. Stillwell, Cincinnati.
111 Contributions to Colloid-Chemical Analysis of Absorption and Secretion. M. H. Fischer, Cincinnati.

Medical Record, New York

June 29, LXXXI, No. 26, pp. 1217-1270

112 Neuroses Dependent on Errors of Internal Secretion of Ductless Glands. M. A. Starr, New York.
113 *Rice in Dietary of Diabetic. H. Stern, New York.
114 Ozena Investigation in United States. E. Mayer, New York.
115 Medical Studies of Alcoholic Problem. T. D. Crothers, Hartford, Conn.
116 Pharyngeal Abscess. B. DeF. Sheedy, New York.
117 Use of Cultures of Staphylococcus Pyogenes Aureus in Curious Outbreaks of Diphtheria. G. B. Lake, U. S. Army.
118 *Elimination of Lockjaw. D. Benjamin, Camden, N. J.
119 Traumatic Cyst of Pancreas. A. E. Isaacs, New York.

113. **Rice in Dietary of Diabetic.**—Stern has employed the common rice, *oryza sativa*, in the treatment of diabetes, more

particularly for the suppression of diabetic acetonuria, for some years; systematic studies of rice with a view to determine its value as a single-type carbohydrate in the antidiabetic dietary were, however, not undertaken by him until about sixteen months ago. During this period he had occasion to employ rice in nineteen moderately severe and grave cases of diabetes, and in a much larger number of milder types of the affection. Compared with other grains rice is poor in protein, fats and mineral matters. It is preeminently a farinaceous food; alone it cannot be considered a complete aliment unless it be taken in amounts entirely too large for a civilized digestive tract. It must hence be combined with nitrogenous and fatty substances and certain salts, probably of potassium and phosphorus, but at any rate with such mineral matter as is ordinarily furnished by fresh green vegetables. A description of the determination of carbohydrate tolerance by rice and the details of a rice diet in the general run of cases of diabetes, Stern reserves for a subsequent article. He says, however, that rice, i. e., the "polished" product of commerce, furnishes substantially nothing to the organism besides an easily digestible starch. Given in suitable amounts this starch is practically all absorbable and ready to serve as a calorifacient. The commercial cereal is therefore peculiarly adapted to supply carbohydrates without any protein or mineral admixture of consequence. The mineral and protein deficiency of rice facilitates the reduction of salts and the calculation of absorbable albumin necessary at every stage of the diabetic affection. Rice, being nearly entirely absorbable, only a comparatively small quantity of it is needed by the diabetic organism; it is not the purpose of the rice to supply the total food requirement as does v. Noorden's standard oat-diet; the cereal may be incorporated with any properly adjusted protein-fat combination. Contrary to the oat diet, rice as a single form of carbohydrate and in suitable combination may be employed by the diabetic for more protracted periods; it may be prepared in a number of different ways and forms that prevent monotony and always furnish a palatable dish for the patient. Sixty grams of the absorbable starch granule of rice generally produce the antiacetonemic effect of 250 grams of the but partly absorbable oats in the standard admixture. Pronounced cases of acidosis are frequently suppressed by the ingestion of 100 grams of rice. The amount of rice requisite to depress the acetonuria does not necessarily increase the intensity of the glycosuria. In a large number of cases the glycosuria will even temporarily decline in a marked degree.

118. **Elimination of Lockjaw.**—It is claimed by Benjamin that lockjaw, due to puncture and injuries, can be entirely eliminated and the death-rate from this disease reduced to nothing. He has never had lockjaw develop in one of his patients, including about 10,000 injuries of all kinds, among them rusty-nail and other punctures of feet and hands. This was accomplished in a locality where lockjaw is endemic, twenty cases having been reported in one year. He says: Sterilize the field of injury, especially the deep edges of the wound. Large and open wounds are irrigated. The vast majority of cases of lockjaw, however, develop from punctural wounds. Insert a few drops of alcoholic solution of cocain. Have on hand variously sized screws. The threads should be at an angle of about 25 degrees to the axis of the screw, and thin. A set of screws should range from the size of a small probe to 5/16 of an inch in diameter, so as to be ready for all sized wounds, such as nails, pitchfork tines, dog teeth, and so on. In the absence of these special instruments, however, one can often use an ordinary aluminum applicator, which has threads on; or one can procure from any hardware store ordinary screws, which answer very well for many cases. Dip the sterilized screw into an antiseptic solution, say, 2 or 3 per cent. lysol. The liquid is held by the spiral gutter. The screw should be of a size to follow the track of the wound easily. If the skin is hard (like the sole of the foot) and the wound entrance is tightly contracted, it may be nicked with the point of a knife. As the screw is being inserted it is kept turning but held back, so that by the time it has reached the bottom it has been turned enough to have carried it more than twice as far. It is now given a few more turns. In this way foreign substances and microbes are lifted (screwed) out. The instrument is then pulled out and washed in an antiseptic; then dipped in tincture of iodin, if not a large puncture, and then forced down to the bottom of the wound and given a few turns backward. Then the screw is dipped into carbolized oil (1 minim of carbolic acid to 14 of pure olive oil) and pushed gradually to the bottom of the wound, turning backward, then unscrewed out. These antiseptics have the property of permeating the surrounding tissues. Dress the wound in the usual antiseptic manner. No germs will live in that wound. Benjamin says even when one has immunized with antitoxin, this local treatment should be used in all punctured and Fourth of July wounds, for the good reason that it not only prevents lockjaw by killing the bacilli, but is equally efficacious against streptococci (blood poison and erysipelas) and staphylococci (abscess and inflammation).

Boston Medical and Surgical Journal

June 27, CLXVI, No. 26, pp. 951-986

120 Experiences of a Medical Teacher. W. T. Councilman, Boston.
121 *Technic of Transfusion. E. H. Risley and F. C. Irving, Boston.
122 Operability of Cerebral Endothelioma; Report of Successful Case. G. L. Walton and J. Homans, Boston.
123 *Study of Erythrocythemia and Report of a Case with Autopsy. A. L. Hamilton and M. E. Morse, Boston.
124 New Mastoid Retractor. P. Hammond, Boston.

121. **Technic of Transfusion.**—Practically all of the previously advocated instruments and devices for transfusion of blood are held by Risley and Irving to be either too complicated or require too much skill in manipulation or manufacture and are not suited alike to all cases. The use of paraffin-coated glass tubes, as advocated by Brewer and Leggett, and later by Vincent, they regard as being the easiest and simplest method and most likely to succeed in all classes of cases. The glass bulb of David and Curtis is held also extremely simple, safe and affords accurate measurements of the blood transfused. They say it is possible to do transfusion without cannulas or clamps or any mechanical aids, provided enough length of artery and vein are dissected out.

123. **Erythrocythemia.**—The points of special interest in Hamilton and Morse's case are: (1) The improvement under *x*-ray treatment. (2) The decrease of the liver from very great size to about normal, apparently due to improvement, but really due to degeneration. (3) The varicosities of the esophageal veins, common in alcoholic cirrhosis of the liver but not expected in this case. (4) The extraordinary and fatal hemorrhage due to. (5) Rupture of the esophageal vein.

New York Medical Journal

June 29, XCV, No. 26, pp. 1349-1392

125 Primary Sources of Tuberculous Infection, Their Relation to Eugenics and Cost of Tuberculosis. S. A. Knopf, New York.
126 Effects of Salvarsan on Eye. R. C. Reese, New York.
127 Neosalvarsan. A. G. Rytina, Baltimore.
128 *Use of Olive Oil to Prevent or Relieve Postanesthetic Vomiting. R. H. Ferguson, East Orange, N. J.
129 Alopecia Areata; Its Causative Factors and Therapy. P. E. Bechet, New York.
130 *Simple and Improved Quantitative Test for Indican. F. C. Askenstedt, Louisville, Ky.
131 Care of Health During Menstrual Period and Menopause. A. Parry, New York.
132 Theory of Origin of Disease. C. O. Linder, Spokane, Wash.

128. **Postanesthetic Vomiting.**—Ferguson does not believe that during, or at any one time after an anesthesia the stomach contains a dram of ether nor does he believe that the presence of ether in the stomach is the cause of postanesthetic nausea. If his idea is correct, then olive oil can do no good, a fact borne out by his experience. He says: Supposing that there were in the stomach a certain amount of ether, and that the ether vapor in the stomach and small intestines does cause nausea and vomiting, could any amount of olive oil that would be feasible by mouth, be of any practical use in abolishing nausea? Let us suppose all the ether in the stomach to have been absorbed by this oil. What will become of it? The case is not the same as with ether absorbed by oil in the large intestine for the speedy restoration of the opsonic index. In the sigmoid flexure the oil remains as oil and the ether may be absorbed by this oil and held in suspension so long that peristalsis will be resumed, and the ether be either evacuated with some of the oil, or else, liberated

slowly, will pass with the normal flatus. In the case of the oil in the stomach the facts are different. It finally becomes saponified and is absorbed as any other digested fat, possibly carrying into the system again with itself some of the ether to be reexcreted, and liberating a part to play again the rôle of irritant. Ferguson suggests a line of experiment which possibly may be of value if either in the stomach does play any important part in postanesthetic vomiting. It is the administering of liquid petrolatum. This drug is inert as a therapeutic agent, unirritating, will not be saponified, cannot be absorbed, and is an excellent protective to mucous membrane. His experiments are not yet numerous enough to warrant drawing conclusions from them at this time, but his idea is that this bland, unirritating, foreign body which tends to produce easy stools, if given in sufficient quantities, will slowly but surely pass through the alimentary canal, taking with it any ether and holding it in suspension until it is evacuated at the anus.

130. **Test for Indican.**—Askenstedt's test is carried out as follows: For preliminary treatment, liberating indican, to 100 c.c. urine add 0.1 gm. corrosive sublimate for every degree of specific gravity above 1000; for example, for specific gravity of 1010, 1 gm.; for 1015, 15 gm.; for 1022, 2.2 gm. Dissolve sublimate and set aside until a heavy precipitate is formed; to hasten it, when tardy, expose to cold. Remove sediment by filtering twice through double filter paper, and pour exactly 10 c.c. filtrate into one of the test-tubes. Warm this until the tube begins to feel hot to the hand, then add 10 c.c. of ferric chlorid solution, and mix by inverting the tube once; then add quickly 8 c.c. chloroform, and extract the indigo forming by shaking the tube two or three minutes, holding it in a horizontal position. After this, let the chloroform fall to the bottom of the tube, then pour off most of the supernatant fluid, fill the tube nearly full with water, invert it a few times to wash the chloroform, let this again precipitate in the tube, and pour off most of the water. Repeat this process of washing, taking care that no chloroform escapes with the wash water, and allowing not more than 2 or 3 c.c. of the last wash water to remain over the chloroform. Now add from 13 to 15 c.c. of the alcoholic solution of corrosive sublimate, and mix. A clear, blue fluid should result. If hazy, add 1 or 2 c.c. more of alcohol until the fluid clears up.

Keep this solution in a dark place when not in actual use. Compare the color of this fluid with an equal quantity of a standard solution of indigo blue in the second test-tube by holding the two test-tubes in front of a white surface, preferably a white blotter. This standard solution is made by pouring into the empty second tube, a quantity of water equal to the amount of the fluid in the first tube, and then dropping the stock solution of indigo blue into the water, inverting the tube after each drop, until both solutions have the same amount of blue color. If this requires 4 drops of the stock solution the percentage is 0.0004; if 5 drops, 0.0005; if 6 drops, 0.0006; etc.

The indican extract will usually prove to be slightly greenish in color. By adding one or more drops of the picric acid solution to the standard solution in the test-tube, this can be made to conform to the color of the extract. Urine containing 0.0025 per cent. or more of indican, or giving a blackish extract, should be diluted with an equal quantity of water and retested.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

June 8, I, No. 2684, pp. 1277-1344

1 Chronic Diarrhea in Adult. R. Hutchison.
2 Relations of Biology to Pathology. H. Gilford.
3 *Ulcerous Lesions of Tongue. J. H. Evans.
4 *Action of Salvarsan and Neo-Salvarsan on Wassermann Reaction. J. E. R. McDonagh.
5 Roentgen-Ray Treatment of Exophthalmic Goiter. W. H. Hooton.
6 Dermoids of Tongue. R. Ollerenshaw.
7 Case of Viper Bite in Epping Forest. B. F. Pendred.
8 Enormous Parotid Tumor in Chinese Woman. H. Balme.
Means of Employing Them. (Concluded.) E. A. Cooper.
9 Perforated Intestinal Ulcer: Operation: Recovery. W. Washbourn.
10 Bactericidal Action of Cresols and Allied Bodies and Best Means of Employing Them. (To be continued.) E. A. Cooper.

June 15, I, No. 2685, pp. 1345-1408

11 Evolution of Obstetric Medicine. J. Byers.
12 *Wertheim's Operation for Cancer of Cervix Uteri. J. D. Malcolm.
13 *Fracture of Lower End of Humerus in Child Treated by Immediate Wiring. L. A. Parry.
14 *Endothelioma of Hypophysis Cerebri with Infantilis. G. E. Rennie.
15 Appendicitis Dilemma and Pre-Operative Diagnosis. W. Ewart.
16 New Methods for Culture of Bacteria. G. Mann.
17 Bactericidal Action of Cresols and Allied Bodies and Best Means of Employing Them. (Concluded.) E. S. Cooper.

3. **Ulcerous Lesions of Tongue.**—Evans found that cancer of the tongue is of frequent occurrence in males over the age of 40 who may be addicted to alcohol or tobacco, who frequently partake of irritating condiments, or who practice any of the different habits of chewing. He says that any long-continued wart, hard lump, or unhealed ulcer on the tongue or gums is liable to became the seat of cancer. Close attention to the cleanliness of the mouth and the brushing of the teeth is advisable. There is no more frequent precursor or accompaniment of cancer of the tongue than syphilis. Any decayed tooth, any roughness of the teeth or of a denture demands a visit to the dentist, whereas, for any soreness early medical advice should be sought, as such alone leads to the early recognition of cancer and is the keynote to success.

4. **Action of Salvarsan.**—Taking all stages of syphilis, McDonagh found that from three to seven injections are necessary to cure most cases of syphilis. There is no doubt that many cases in the tertiary stage can be cured with neo-salvarsan which failed to be cured with salvarsan. Liable to change as these conclusions may be, he cannot but admit that the alterations in the Wassermann reaction as the result of treatment are most constant, and that when tested at short intervals gives a much safer guide to regulate treatment than by saying that just so many injections will be required, or, as the old syphilologists used to teach, that a three years' pill treatment was sufficient for all cases alike. As there is a possibility of fallacy, he advises his patients to have a provocative injection of neo-salvarsan six months or a year after they have been discharged and the blood tested forty-eight hours, the seventh, fourteenth, twenty-first and twenty-eighth day after that injection. All McDonagh's patients for some months past have had three to nine injections of salvarsan, given at seven to fourteen days' interval, or three to seven injections of neo-salvarsan, given at not more than seven days' interval, with not a single bad manifestation or a recurrence of symptoms.

12. **Wertheim's Operation.**—Wertheim's method of operating is considered by Malcolm a very great advance on any other.

13. **Wiring Fracture of Humerus.**—On the fourth day after the accident Parry cut down the broken ends of the bones and wired them together with silver wire. The result is excellent; the patient has the power of full extension, perfect pronation and supination, and the only limitation of movement is in the direction of flexion, which is very slightly impaired. A week or so after the operation it was noticed that the muscles supplied by the musculo-spiral nerve were paralyzed. This may have occurred before it was discovered, for the arm was in splints. Parry thinks this was caused by some bruising of the nerve during the operation. The muscles have quite recovered under electric treatment.

14. **Endothelioma of Hypophysis.**—A boy, 16 years of age, was admitted to the hospital in 1907, with a history of headache for some considerable time, accompanied by a feeling of drowsiness and disinclination for any kind of food, with some wasting. The diagnosis in Rennie's case was extremely difficult, and the only points to guide him were the high arterial tension, the large amount of pale urine of low specific gravity, the headache and vomiting. In the absence of optic neuritis and any localizing symptoms of brain tumor a diagnosis of chronic interstitial nephritis was made. The patient was discharged from the hospital slightly improved in general

health. He remained in fair general health till readmission to hospital in August, 1909. He had not apparently grown in height or developed but he was about 2 pounds heavier. He complained still of headache and occasional vomiting of cerebral type. His memory was defective and had been getting worse for the last year. He was quite intelligent, but could not fix his attention. Headache was constant day and night; it disturbed his sleep, and was made worse when he tried to read. Everything seemed a trouble to him. The pupils were small and equal; they reacted to light and convergence and the ocular movements were normal. Examination of the media showed a post-neuritic atrophy in both disks and investigation of the fields of vision revealed a very definite bitemporal hemianopsia. His vision was 6/9 in each eye. There was no other cranial nerve affection.

His muscular power was feeble, as all his muscles were but poorly developed; he could not walk except with assistance as he tended to fall backwards. There was no disturbance of sensation. His knee-jerks were increased, more so on the right side than the left; there was no ankle-clonus and the plantar reflex was flexor in type. There was now no excess of urine; it was alkaline, specific gravity 1.020, and contained no albumin and no sugar. His temperature on admission was subnormal, pulse 90 and respiration normal. Six days later he had two or three fits, in which he became completely unconscious, breathing stertorously and sweating profusely. The limbs became rigid, the reflexes were exaggerated and a Babinski reflex was present on both sides, but was easily exhausted. He had incontinence of urine during the fits. The temperature rose to 103 F. and remained high for some days, varying from 99.8 to 105 F. Lumbar puncture furnished some cerebrospinal fluid which did not escape under pressure and microscopic examination showed only a few lymphocytes, but no organisms; the fluid was sterile on culture. There was marked prostration, with dry brown tongue, sores on the lips and general hebetude.

From this state he gradually recovered, but there was a definite weakness on the right side and on his discharge from the hospital there was ankle-clonus on the right side and double Babinski reflex. He died in his own home a few months later, but he was seen at intervals from the time of his discharge from the hospital up to the time of his death, and no material change took place in his condition. The pituitary gland was replaced by a large neoplasm, the size of a large walnut. Histologic examination showed that the growth was an endothelioma, which had invaded the gland and only very little of the glandular tissue remained. It was not possible from examination of the tissue to say which lobe of the pituitary gland had been first invaded.

Lancet, London

June 8, I, No. 4632, pp. 1515-1588

18 *Acute Infective Processes Due to Streptococcus. W. G. Ball.
19 *Clinical Notes on Blood-Plates. E. M. Brockbank.
20 *Is There a Directly Rheumatic Form of Ulcerative Endocarditis? C. F. Coombs.
21 Congenital Stenosis of Aorta. R. O. Moon.
22 Two Cases of Splenectomy for Rupture of Spleen; Recovery. W. F. Jones.
23 Hemopericardium of Traumatic Origin; Operation. E. B. Gunson.
24 Dermatitis Caused by "Di-Nitrochlor Benzole." M. H. Bernstein.
25 Bilateral Operation for Inguinal Hernia. E. W. Roughton.

June 15, CLXXXII, No. 4663, pp. 1589-1664

26 Some Moot Points in Pathology and Clinical History of Pneumonia. P. Kidd.
27 Pathology of Immunity, as Illustrated by Behavior of Fluid Exudates from Tissues and Various Body Cavities, in Acute and Chronic Bacterial Infections. L. S. Dudgeon.
28 Presence and Intensity of Syphilis in Past and at Present Day. N. Moore.
29 Abdominal Drainage in Treatment of Peritonitis. C. Wallace.
30 Syphilis D'Emblée. J. E. Lane.
31 Relief Following Bilateral Nephrotomy and Drainage for Acute Nephritis Attended by Suppression of Urine and Uremic Convulsions. W. G. Spencer.
32 Tetanic Spasms in Chronic Ulceraton of Leg. M. D. Roberts.
33 Accessory Uterus Distended with Menstrual Fluid in Right Broad Ligament. J. Oliver.

18. Infective Processes Due to Streptococcus.—In Ball's opinion the ideal method of approaching a case of infection due to the streptococcus is: First, the clinical diagnosis should be accurate to the smallest detail, the signs and symptoms being carefully noted both as regards the local and general condition of the patient. The help of the bacteriologist should be sought for in all cases, however trivial they may appear to be in the early stages, and as soon as it is recognized, that he can give some information both as to diagnosis, prognosis and method of treatment. Having dealt with the lesion surgically the necessity for the use of the artificial methods of stimulation of the machinery of resistance must be discussed, and if decided on it must be requisitioned as soon as possible. Serum should be given at the earliest possible opportunity for its action to be effective. It can be used locally as a dressing, intravenously, subcutaneously, or by the rectum. Intravenous inoculation in combination with normal saline solution should be used where it is desired to get a rapid effect. The doses should be as large as 75-100 c.c. and repeated if necessary. This should be followed by subcutaneous injections of 50-100 c.c. per diem.

The type of serum that should be used is that which most nearly approaches the autogenous variety. The serum obtained from the blood of a patient who had recovered from an acute streptococcus infection has been successfully utilized in the treatment of a similarly infected patient on more than one occasion, and still further, friends have been known to artificially immunize themselves against the microorganism causing the disease, and submit to a withdrawal of their own serum. Following the use of the serum, or in combination with it, a vaccine should be injected as soon as it has been prepared. As a general rule an autogenous agent is preferable for the reasons already given, but it may be replaced by one prepared from a mixture of streptococci of the same type of lesion from which the technic used has failed to isolate it. Moreover, stock vaccines may be used during the preparation of the autogenous agent. Should a mixture of different bacteria be found in the lesion a vaccine prepared from such a mixture is always indicated.

With regard to the dosage, Ball says it is impossible to lay down an absolute rule. There are indications that if a patient is seen in the very earliest stage of the disease and maintains a good general condition while the focus of infection is still localized, then a relatively large dose of vaccine may be given; but, on the other hand, if the general condition is bad, and the lesion is becoming generalized, then a small dose is indicated as the initial inoculation. In other words, the more acute and the more generalized the lesion the smaller should be the dose introduced. Having obtained no effect as the result of the smaller dose it should be increased gradually until such is reached which will produce the desired reaction. On the other hand, if a harmful effect is observed, then a smaller dose is indicated, or even vaccine-therapy contraindicated. If this course be adopted then Ball thinks it will be realized that vaccine-therapy and serum-therapy are at least useful adjuncts to our ordinary methods of surgical treatment, not only in those cases in which these have failed, but as a routine.

19. Blood-Plates.—As a result of a prolonged series of observations, Broockbank concludes that the bodies met with in blood-smears which have been fixed and stained in the ordinary way and known as blood-plates, all arise from the interior of red corpuscles, many of which manifestly burst as the blood-plate material escapes from them.

20. Rheumatic Form of Ulcerative Endocarditis.—The hearts from seven cases of streptococcal ulcerative endocarditis were subjected to a thorough histologic examination by Coombs. The findings in all the cases were substantially identical, in spite of wide clinical differences in their virulence and in their relation to previous rheumatism. No histologic evidence of a directly rheumatic origin was forthcoming, even in those cases in which the rheumatic factor was most in evidence clinically.

Medical Press and Circular, London

May 22, XCIII, No. 3811, pp. 525-550

34 Counter-Irritants in Treatment of Pulmonary Tuberculosis. R. Brunon.
35 Latent Surgical Disease. V. Z. Cope.
36 Three Cases of Acute Hepatic Intoxication Following Abdominal Section in Which Jaundice Was a Marked Feature. V. Bonney.

37 Mental Derangements in Their Relation to Marriage. E. S. Reynolds.
38 Herpes and Brachial Neuritis. G. M. Smith.

May 29, XCIII, No. 3812, pp. 551-578

39 Abdominal Section. J. M. G. Swainson.
40 Congenital Malformation of Rectum Associated with Sacro-Coccygeal Meningocele in Adult. E. W. Lewis.
41 Village Water-Supplies. H. Kenwood.
42 Ionization in Treatment of Diseases of Skin. W. K. Sibley.
43 Para-606: an Annotation. C. F. Marshall.

June 5, XCIII, No. 3813, pp. 579-604

44 Myopathies. F. S. Palmer.
45 Some Medicolegal Cases Met With in General Practice. H. N. Hardy.
46 Instruction of Young in Sexual Hygiene. E. Pritchard.
47 Balneologic Aspects of Radium. E. Weiss.

June 12, XCIII, No. 3814, pp. 605-632

48 Rational Treatment of Uterine Prolapse. H. Jellett.
49 Carcinoma of Colon. V. Z. Cope.
50 Chronic Visceral Pain in Relation to Surgery and Psychotherapy. T. A. Williams.
51 Roentgen-Ray Diagnosis of Aneurysm of Thoracic Aorta. M. R. J. Hayes.

Clinical Journal, London

May 22, XL, No. 7, pp. 97-112

52 *Varieties of Cough and Treatment for Relief of Them. Sir D. Duckworth.
53 Some Common Disorders of Nutrition in Infancy. H. C. Cameron.

May 29, XL, No. 8, pp. 113-128

54 So-Called Delayed Chloroform Poisoning. E. M. Corner.
55 Bacilluria. C. Williams.
56 Some Common Disorders of Nutrition in Infancy. H. C. Cameron.
57 Electric Colloids in Major Infections, Surgical and Puerperal. H. Duvernal.

June 5, XL, No. 9, pp. 129-144

58 Treatment of Joint Effusions and of Some Fractures. Sir F. Wallis.
59 Ultramicroscopic Causes of Disease. R. T. Hewlett.
60 Some Common Disorders of Nutrition in Infancy. H. C. Cameron.
61 Ionization in Treatment of Diseases of Skin. W. K. Sibley.

June 12, XL, No. 10, pp. 145-160

62 Shock. C. B. Lockwood.
63 Traumatic Neurasthenia. H. C. Thomson.

52. Varieties of Cough.—The cough excited by laryngeal disease, Duckworth says, is more appropriately dealt with by local treatment, inhalation of vapors of benzoin, menthol, eucalyptol or thymol, singly or in combination, or sprays of liquid paraffin containing menthol, camphor and oil of cinnamon, the latter being more useful in chronic laryngitis. Lozenges of black currant and ammonium chlorid give relief, and small blisters, the size of a shilling, applied on either side of the thyroid cartilage, are helpful in tuberculous disease of the larynx. In plastic bronchitis, the severe cough induced by the occlusion of the smaller bronchi is best removed by iodid of potassium, which commonly succeeds in preventing the formation of the casts, and cures the disease. Cough dependent on aneurysmal pressure is relieved by appropriate treatment for the primary disease and iodid of potassium with reduced diet is indicated for this purpose and is generally effectual. Whooping-cough is restrained by inhalations of benzoin, creosote and other tar-products, while belladonna with bromid of sodium, together with a good dietary, are the most efficient agents. Tussis hysterica is best not treated as a catarrhal symptom in most instances. It should be ignored if tolerated and not allowed to incur sympathy. Faradism to the neck and thorax repeated as required, may prove very effectual.

Bulletin de l'Académie de Médecine, Paris

June 4, LXXVI, No. 23, pp. 403-421

64 *Operative Measures Capable of Modifying Intra-Ocular Tension. F. Lagrange.

64. Treatment of Detachment of the Retina and Other Conditions with Abnormal Tension in the Eyeball.—Lagrange reviews recent international literature showing that his method of sclerectomy to relieve the hypertension in glaucoma is finding universal acceptance. In treatment of detachment of the retina the aim is the reverse, namely, the purpose is to dam up the fluid in the eyeball, the escape of which is an important factor in many cases of detachment of the retina, especially the traumatic and those following choroiditis or occurring in the course of progressive myopia. In order to prevent the further loss of the fluid, he aims to induce the production of fibrous tissue to dam the points where there is liable to be transudation, and he calls the method "colmatage." This is an agricultural term which designates artificially raising the level and fertilizing low land. After experimenting with various measures to accomplish this result in the eye, he found the most effectual and harmless method to be by superficial galvanocauterizing with a thin, flat blade applied over the surface of the anterior segment of the sclera after a circular equatorial incision of the conjunctiva and turning back of the flap. The posterior segment is treated only with injection of 10 per cent. salt solution; this supplies irritation enough for the purpose. By this means the routes for filtration in front and for transcleral excretion at the rear are blocked; no point for escape of the fluid is left except along the optic nerve. The tension in the eyeball gradually increases, and this aids in restoring the retina to place. He has been applying the method extensively for a year and the results are encouraging although not conclusive to date. In every case the tension of the eyeball was raised, and although this alone is not sufficient to cure the detachment of the retina yet it is an invaluable adjuvant. In the myopic or after trauma, this colmatage of the eye plus injections of salt solution into the capsule of Tenon and compression have often proved all that is necessary, but when the detachment is of inflammatory or congestive origin, blood-letting, mercurial inunctions and mercurial treatment in general are indicated, besides, to aid in removing the cause. The primary cause, he adds, should always be borne in mind in treating the eye.

Bulletins de la Société de Pédiatrie, Paris

April, XIV, No. 4, pp. 193-248

65 *Hernia in Young Infants. (Traitement de la hernie chez le nourrisson.) M. Savariaud.
66 Sclerema Neonatorum in Patches. (Sclérème adipeux en plaques.) H. Triboulet, Ribadeau-Dumas and Debré.
67 Familial Achondroplasia. (Une famille d'achondroplases.) H. Triboulet and de Jong.
68 *Urea Content of Cerebrospinal Fluid in Infants. (L'urée dans le liquide céphalo-rachidien des nourrissons.) P. Nobécourt, Sevestre and Bidot.
69 *Foreign Body in Bronchus. (Symptomatologie des corps étrangers des voies aériennes.) H. Abrand.

65. Hernia in Infants.—Savariaud remarks that attempts to treat hernia in infants by the same technic as in adults are almost certain to fail, as conditions differ so widely, while a special simple technic worked out by Lorthioir for infants ensures certain and superior results. He has applied this technic in hundreds of cases in the last three years, and extols the advantages of radical operation which is always justified and is indicated in nearly every case, certainly after the age of 6 months. The technic described requires only five or ten minutes, and healing by primary union in twenty-four hours is the rule. The incision in the skin is only 2 cm. in length, except for large hernias. The subcutaneous cellular tissue is separated and the testicle is pushed aside, with the spermatic cord and the hernia. The tissues over the cord are incised, the sac is isolated and resected as high as possible, with or without preliminary ligation of the sac. The skin incision is then closed with minute clamps which can be removed in a day or so. The anterior wall of the inguinal canal is never incised, and no dressings afterward are needed. Savariaud has often been impressed with the rapid subsidence of digestive disturbances after the hernia had been corrected in this way, the colics and discomfort disappearing and the children commencing to thrive at once. The roundness of the body of young infants renders it difficult to keep a truss in place, and excoriation and eczema are liable to result, while the hernia frequently escapes from under the truss and serious damage may result. He does not hesitate to recommend this operative treatment for every hernia in an infant unless it is merely incipient, and even then when it does not subside under an appropriate truss.

68. Urea in the Cerebrospinal Fluid of Infants.—A large proportion of urea was found in the cerebrospinal fluid of the infants with severe gastro-intestinal derangement out of fourteen examined. The infants in this class generally displayed also a tendency to sclerema and albuminuria, but not all of them had kidney disease or it was very slight; most of them had some serious liver affection.

69. **Foreign Body in the Bronchus.**—Abrand reports a case noticeable for the total absence of any signs or symptoms at any time suggesting the presence of a foreign body in the air passages. It was supposed to have been swallowed but roentgenoscopy disclosed it in a bronchus of the third size and it was extracted by the mouth. The defensive reflex reactions grow progressively less and less as the distance from the mouth increases and they are less needed, so that in the ramifications of the bronchi there may be no reaction at all to the presence of a foreign body until inflammation develops from the irritation. Bronchitis with purulent expectoration and enlargement of the bronchus should always suggest the possibility of a foreign body, and bronchoscopy will clear up the diagnosis.

Grèce Médicale, Syra, Greece

XIV, No. 9-10, pp. 17-20

70 Operative Treatment of Cholelithiasis. (2 cas de chirurgie des voies biliaires.) A. Antipas.

Presse Médicale, Paris

May 29, XX, No. 44, pp. 465-472

71 *Treatment of Backward Curvature of the Knee. (3 cas de genu recurvatum.) E. Kirmisson.

June 1, No. 45, pp. 473-484

72 *Hemolytic Tuberculosis. (Bacillo-tuberculose hémolysante.—Etude pathogénique des anémies tuberculeuses.) L. Landouzy, H. Gougerot and H. Salin.

73 *Echinococcus Cysts of the Lungs. (Kystes hydatiques du poumon.) E. Desmarest.

71. **Genu Recurvatum.**—Kirmisson gives illustrations of three cases of this deformity in his service recently at the same time. One required a wedge resection of an exuberant osteofibrous mass back of the knee, the result of a gonococcus arthritis entailing ankylosis and proliferation. The deformity was of traumatic origin with suppuration in the second case, and the resection of the joint caused a transient flaring up of the suppuration. In the third case the genu recurvatum was the result of muscular contracture left from hip-joint disease; it was corrected by subcutaneous section of the femur, leaving the knee intact. The outcome was excellent in each case.

72. **Tuberculous Anemia.**—Recent research suggests that the anemia in tuberculosis is sometimes the result of direct destruction of red corpuscles, with or without a tendency to jaundice. Two cases are reported; in the first the reds were exceptionally fragile and there was no hemolysin in the serum; in the other case the serum was rich in a hemolysin to which the reds—although apparently normal—succumbed. In other cases on record these two conditions seemed to alternate. The data suggest that the tubercle bacilli do not generate the hemolysin directly; it seems to be secreted by the tissues under the influence of the infection. This explains the anemia as due to destruction of reds formed in normal proportions while the proportional number of whites persists normal or above.

73. **Echinococcus Disease of the Lung.**—Desmarest reports the case of a butcher of 42 to emphasize the difficulty of diagnosis even with exploratory puncture, radioscopy and laboratory tests; also the necessity for immediate operation, the diagnosis once certain; and the way in which even very large cysts promptly heal. The exploratory puncture in this case had failed probably because the needle had been too short; one 7 or 8 cm. long would have been better. The fixation of complement test was also negative and there was no eosinophilia. The cyst was in the lung proper and two or three liters of fluid gushed from it when it was opened after section of the eighth rib. The cyst membrane could not be detached and was left; it was spontaneously thrown off and was extracted, as it presented the fifteenth day, after which the patient rapidly recovered.

Revue de Gynécologie, Paris

May, XVIII, No. 5, pp. 465-560

74 *Technic for Making Artificial Vagina. (De la création d'un vagin dans les cas d'absence congénitale par dédoublement de l'espace intervesico-rectal suivi soit d'autoplastie par manchon cutané, soit de transplantation intestinal.) E. Juvara.

75 *Firearm Wounds of the Spleen. (Les plaies de la rate par coup de feu.) M. Guibé

74. **Artificial Vagina.**—Juvara gives thirteen illustrations of two technical methods and of their application in two cases. In both the operation was successful. In the first the new vagina was made of a roll of skin taken from the back of the thigh. The patient was a girl of 16. The second patient was a woman of 28 and the vagina in this case was made from a loop of small intestine.

75. **Firearm Wounds of the Spleen.**—Guibé has compiled 108 cases of this kind, with a mortality of 58 per cent. When the thorax is involved in the injury the mortality was much higher, while in the twenty-three cases in which the spleen alone was injured, the mortality was only 30 per cent. Prompt operative treatment arrests the hemorrhage and thus averts the main danger. The symptoms of injury of the spleen are vague and uncertain, the course of the bullet and signs of internal hemorrhage being the only guide.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XVII, No. 2, pp. 137-286. Last indexed Feb. 3, p. 379

76 *Premature Separation of Normally Located Placenta. (Vorzeitige Lösung der normal sitzenden Placenta.) P. Barchet.

77 *Research on Pigeons Fails to Show That the Mother Can Influence the Fecundated Ovum. (Vermag die Mutter das bebrütete Ei zu beeinflüssen?) H. Sellheim.

78 *Embedding of Ovum on Stump of Fallopian Tube. (Fall von Eiimplantation auf dem Stumpfe einer wegen Tubargravidität früher exzidierten Tube.) F. Benzel.

79 Pregnancy Changes in the Blood. (Zur Frage der Blutveränderung bei Schwangeren und Gebärenden.) S. Adachi.

80 Rectovaginal Fistula from Pessary. (Mastdarmscheidenfistel nach Zwanck-Schillingschem Flügelpessar.) R. Basset.

81 Influence on Fetus of Beriberi in the Mother: Six Cases. (Einfluss der mütterlichen Kakke auf den Foetus.) J. Ogata and S. Iizuka.

82 Technic for Cesarean Section. (Schnittführung bei der Sectio caesarea.) F. A. Kehrer.

83 Embryonal, Fetal and Infantile Pelvic Organs. (Embryonismus, Fötalismus und Infantilismus.) F. A. Kehrer.

84 *Acute Mastitis. (Zur Prophylaxe und Therapie der akuten puerperalen Mastitis.) S. Eicher.

85 Inherited Syphilis Affecting the Vessels in the Liver. (Eine neue Art von Gefässerkrankung der Leber bei congenitaler Lues.) B. Lühmann.

86 *Predetermination of Sex. (Zur Frage der Vorausbestimmung des Geschlechts beim Menschen.) O. Schöner.

87 Putrid Endometritis: Bacteriologic Research. G. Sackenreiter.

76. **Premature Separation of the Normally Located Placenta.**—Barchet states that this occurred in nine cases during the last three years at the Tübingen clinic, as he reports in detail. The hemorrhage may distend the uterus until some vessel may rupture. The interruption of the fetal circulation did not prove fatal in these cases as the child was delivered at once, all happening to be in readiness for delivery. The danger for the mother is increased by the fact that the cervix is not usually dilated enough for delivery at once. Mechanical factors are generally responsible for the premature separation, the collapse of the uterus walls after the fluid of a hydramnion has escaped or one of a pair of twins has been delivered; transverse presentation may also bring it on. In ten cases on record the premature separation occurred in women with eclampsia, in others pregnancy toxicoses were evident, hemophilia in another case and a hemorrhagic diathesis in others. The findings in these placentas suggest a toxic influence from the products of the fetal metabolism, evidences of which were also apparent in other organs, degenerative processes in the kidneys, liver, etc. Treatment should aim to evacuate the uterus without delay and with the least injury. The mother's interests should be paramount, as the child seldom survives.

78. **Embedding of Ovum on Stump of Tube.**—Benzel reports a case of this kind, the third on record. They teach the necessity for wedge excision in removing the tube on account of a tubal pregnancy. This alone guarantees against such happenings.

84. **Acute Mastitis.**—Eicher states that at Basel the woman's breasts after the birth of a child are kept constantly covered day and night with a little pad of gauze moistened with a 4 per cent. boric acid solution. A piece of rubber tissue overlaps the pad and sticks to the skin, and a towel is then laid over both breasts. The pads are renewed each time after the infant nurses. By this simple means since 1904 the proportion of cases of puerperal mastitis has dropped from 6 to 0.9 per cent., and suppuration occurred in only

0.2 per cent. in 8,528 parturients. The mastitis is treated with 5 per cent. phenol-glycerin dressings and ice, suspending the breast to ensure keeping it still, drawing the milk with a breast-pump, and evacuating pus through a minute incision, introducing the finger or forceps to reach all the foci. Bier's method of suction hyperemia has not maintained a place in treatment of mastitis, he says. Its only advantage is that it spares the incision, but this is outbalanced by the liability to local erysipelas, etc.

86. **Predetermination of Sex.**—Schöners' theory was mentioned in THE JOURNAL April 12, 1912, p. 1220. Here he states that further experiences have confirmed it and that it is within the power of every physician to test its truth. His work is based on three series of families through several generations.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXIII, No. 1, pp. 1-199. Last indexed June 15, p. 1885

88 *The Spleen as an Organ for Defense Against Tuberculosis. (Rolle der Milz als Schutzorgan gegen tuberkulöse Infektion.) G. Schröder, K. Kaufmann and H. Kögel.
89 *Tuberculin Treatment. (Ueber Tuberkulinbehandlung.) G. Schröder.
90 *The Graduated Pirquet Tuberculin Reaction in Prognosis and in Tuberculin Treatment of Pulmonary Tuberculosis. (Ueber die Pirquetsche Hautreaktion in abgestuften Dosen in bezug auf die Prognose und die Tuberkulintherapie bei der Lungentuberkulose.) H. Kögel.
91 *Pseudoleukemia and Its Connection with Tuberculosis. (Ueber Hodgkinsche Krankheit in ihren Beziehungen zur Tuberkulose; kasuistischer Beitrag.) K. Kaufmann.
92 *Mixed Infection in Tuberculosis. (Ueber die Frage der chronischen Mischinfektion bei Lungentuberkulose—Eine klinisch-bakteriologische Studie.) H. Kögel.
93 *Curability of Laryngeal Tuberculosis. (Ueber Dauererfolge bei Larynxtuberkulose.) L. Brüll.
94 Experimental Induced Pneumothorax. (Ueber die Veränderungen der Pleura und Lunge gesunder Hunde durch künstlichen Pneumothorax.) K. Kaufmann.

88. **The Spleen as Defense Against Tuberculosis.**—The resisting powers of rabbits to infection with human tubercle bacilli did not seem to be reduced by splenectomy in the researches reported. Chopped spleen, however, seemed to display a curative action in the experimental tuberculosis.

89. **Tuberculin Treatment of Tuberculosis.**—Schröder states that three years of further experience have confirmed his views in regard to tuberculin treatment; they differ in some points from those currently in vogue. He does not believe that tuberculin is of any use for the early diagnosis of active tuberculosis in adults. The fact that a patient becomes nonsensitive to tuberculin by no means proves that the tuberculosis is cured. Non-susceptibility to tuberculin toxin seems to be accompaned by a tendency to more serious recurrences. Physical and dietetic measures should be the main reliance in treatment; tuberculin is merely an adjuvant. It may be serviceable in the severer cases but only when given in minute doses at long intervals. He warns expressly against the use of tuberculins in general practice.

90. **The Cutaneous Tuberculin Reaction in Prognosis and Treatment of Tuberculosis.**—Kögel expatiates on the great diagnostic importance of the Pirquet test when applied with graduated doses of tuberculin. The outcome of the test depends in large measure on the exact technic. Instead of dropping the tuberculin on the skin, he transfers a drop with a glass rod to the tip of the punch or needle. He used different strengths, according to the Ellermann and Erlandsen technic, and repeated the test at long, regular intervals, comparing the findings each time with the clinical course of the disease. The outcome is given in a number of large tables, classified according to the progress of the disease. Certain deductions may be drawn from the findings over long periods, so that the prognosis can be based on them. He thinks that this graduated method is destined to prove particularly useful when it can be applied on a large scale and over long periods; his premises have been confirmed by the later history in his cases.

91. **Hodgkin's Disease in Relation to Tuberculosis.**—Kaufmann reports three cases; in one there did not seem to be any etiologic connection with tuberculosis but in the others there was a complicating or causal pulmonary tuberculosis. In the first case there were evidences merely of fibrinous bronchitis. The patients were all men between 32 and 36. One succumbed; one improved after resection of some mediastinal enlarged glands causing suffocation.

92. **Mixed Infection with Pulmonary Tuberculosis.**—Over eighty-four pages are devoted to this clinical and bacteriologic study of eighteen cases and review of the literature. Many varieties of germs were found, and Kögel emphasizes the importance of the findings on washing the sputum and inoculating a blood-plate with it to differentiate the various germs. The germs thus cultivated permit specific vaccine therapy. His experience confirms the fact that the hemolytic properties of the cocci show that the resisting powers of the body are at a low ebb; none of the patients with hemolytic cocci long survived.

93. **Laryngeal Tuberculosis.**—Brüll found the ultimate outcome of laryngeal tuberculosis unexpectedly favorable in a number of the 290 patients treated at the sanatorium in the ten years ending 1908. In only seven cases was the laryngeal process responsible for the patient's death of all the 170 who have died since; twelve patients still have trouble in their throats, constant or recurring, but eighty patients have been permanently cured; the other twenty-nine patients have been lost to sight. Of the 221 patients with open tuberculosis, 25.8 per cent. were cured, while 57 per cent. of the others were cured. Treatment was conservative, or with cauterizing or operative measures as needed. This experience shows that laryngeal tuberculosis in all its forms is curable. The prognosis depends mainly on the extent and prospects of the pulmonary disease and especially on whether there is fever or not. A well planned method of treatment based on strict individual indications will certainly give results. The details of the eighty cured patients are tabulated in full. It is a strict rule at the institution never to operate when the patient has fever, and this restriction is probably an important factor in the results attained. Cauterizing (lactic acid) is a far less serious procedure than mutilating operations; it gave 35.7 per cent. permanent cures among the forty-two patients thus treated up to 1905, and 55.2 per cent. permanent cures in the twenty-nine patients since that date. Of the total patients, 58 per cent. were regarded as clinically cured when they left the institution and 31 per cent. have remained cured since. When recurrence took place it was always during the first two years afterward. Lactic acid seems to display an ideal elective action, destroying diseased tissue and this alone, thus limiting the caustic action to the exact points where it is needed, while with operative measures much sound tissue has to be sacrificed.

All the articles in this number of the Beiträge issue from the sanatorium for pulmonary diseases at Schömberg, of which Schröder is director.

Berliner klinische Wochenschrift

June 3, XLIX, No. 23, pp. 1069-1116

95 *Diagnosis of Contusion of the Spleen. (Experimentelle Beiträge zur Diagnostik der subcutanen Pankreasverletzungen.) J. Wohlgemuth and Y. Noguchi.
96 Cases Demonstrating Disturbances in Internal Secretion. (Zur Kasuistik der Störungen der inneren Sekretion.) A. Bittorf.
97 *Influencing of Opsonic Index by Drugs. (Die pharmakologische Beeinflussung des opsonischen Index.) A. Strubell.
98 Prognosis of Puerperal Fever. E. Rosenthal.
99 Lupus of the Tongue. (3 Fälle von Lupus vulgaris linguae.) O. Strandberg.
100 *Foreign Bodies in Upper Air Passages and Esophagus. (Neuere Erfahrungen über Fremdkörper-Extraktion aus den oberen Luft- und Speisewegen.) G. Glücksmann.
101 *Phimosis and Hydrocele in Infants. (Phimose und Hydrocele im Säuglingsalter.) J. Peiser.
102 *Serodiagnosis of Syphilis. (Von der klinischen Bedeutung der Syphilisreaktion von Hermann und Perutz verglichen mit Wassermann.) V. Jensen and J. Feilberg.
103 Toothache After Salvarsan. (Eine Salvarsanreaktion an den Zähnen.) F. Zimmern.
104 Neurofibromatosis and Acromegaly. G. Wolfsohn and E. Marcuse.

95. **Diastase in Blood and Urine as Sign of Injury of the Pancreas.**—Wohlgemuth and Noguchi experimented on dogs and found that after contusion of the pancreas, diastase could be found in both blood and urine. The severer the injury the more rapidly it appears and the larger the proportion. They found also in two clinical cases that diastase was present in blood and urine after an operation on the liver or intestines; this indicated that the pancreas had been injured more or less during the operation, although the proportions were

comparatively small as the injury had been slight. Twenty-four hours after the operation there was considerably more diastase in the urine and blood than before the operation. This experience compels them to publish it as a new test for injury of the pancreas in case of abdominal contusion. All that is necessary for the test is ten test-tubes, two pipettes and a 0.1 per cent. solution of starch (Kahlbaum's soluble starch), and a 1 to 50 normal solution of iodin. The test is made by adding 2 c.c. of the starch solution to each of the test-tubes which contain graduated amounts of the urine or serum. The set is then heated in a water-bath to 38 or 40 C. for thirty minutes, then cooled and the solution of iodin is added a drop at a time to each of the test-tubes until the stain ceases to vanish as the drop falls. The test-tube in which the iodin first turns the fluid purple is the standard. The test-tubes contain respectively 1, 0.5, 0.25, 0.125 c.c., etc. This test for diastase is very simple, and should be applied, they insist, in every case of severe abdominal contusion as it will show whether the pancreas has been injured or not.

97. **Influencing of the Opsonic Index by Drugs.**—Strubell states that some of the common drugs have the effect of sending the index up or down; different drugs have a different influence in this respect according to the chemical composition of the drug, but no action could be detected from salt. Iodin and bromin salts are active in this respect as also urea. In his experiments the latter had a marked influence in reducing the opsonic immunity to staphylococci. This became apparent in fifteen minutes and reached its maximum in an hour. Arsenic, on the contrary, had an opposite effect, rapidly raising the index, in conformity to its therapeutic action.

100. **Foreign Bodies in the Upper Air Passages.**—Glücksmann reviews a number of experiences in this line, one case showing that a small tooth-plate can pass through the wall of the esophagus without injury. The esophagus is entirely empty while roentgenoscopy shows the plate near by. Pick has encountered a similar case in which a tooth can be seen encapsulated near the esophagus. In another case a boy of 13 aspirated a pencil cap, 16 mm. long and 8 mm. in diameter. Roentgenoscopy disclosed it in the right lower lobe, but the next day it was found in the left lower lobe, evidently having been partly coughed out and aspirated anew. It was extracted by bronchoscopy under control of roentgenoscopy. This combination of the two methods is peculiarly advantageous. In conclusion Glücksmann urges the necessity for quiet and tranquil procedures. There is no need for precipitate haste as a rule. Immediate suffocation generally proves fatal before the physician arrives. If the patient survives the first hour, there is no further need for precipitation; quiet consideration of the case is then possible. He warns further that the injury done by the entering foreign body can only be aggravated by further manipulation and traction. The foreign body at rest causes no further damage for a time, so the aim should be to extract it with the least possible commotion and the fewest possible instruments, and, when practicable, under control of combined direct visual inspection and roentgenoscopy.

101. **Phimosis and Hydrocele in Young Infants.**—Peiser declares that active treatment is seldom necessary for either of these. The phimosis may be regarded as physiologic to a certain degree in young infants, and it corrects itself later. Hydrocele also generally subsides spontaneously in the course of the first or second year. In none of his seventy-three cases did the hydrocele increase; in thirty-four it disappeared during the first year in all but three, and in these before the end of the second year. The more carefully the digestion is regulated, the rarer will operation for phimosis be regarded as necessary; the trouble is generally congestion in the abdomen and pelvis from constipation. The urinary disturbances are more often of neuromuscular origin. He regards it as possible for irritation from the rectum to induce spasmodic contraction of the musculature of the pelvic floor and thus impede the voiding of urine.

102. **Serodiagnosis of Syphilis.**—Jensen and Feilberg reiterate that the Perutz technic for serodiagnosis of syphilis is simple and accurate and can readily be applied by the general practitioner. All that is needed is a mixture of sodium glycocholate 2 parts, cholesterin 0.4 part and 100 parts of 90 per cent. alcohol. The second reagent is a 2 per cent. aqueous solution of glycocholate. Comparative tests with this and the Wassermann technic gave constantly negative findings with both in sixty-three cases free from syphilis, while in ninety syphilitics the findings with this and the Wassermann technic paralleled each other in 48 per cent., but the Wassermann gave a positive reaction in an additional 18 per cent. The Perutz technic may therefore be regarded as reliable when it is positive, and it seems to be a welcome simplification of the Wassermann principle.

Deutsche medizinische Wochenschrift, Berlin

June 6, XXXVIII, No. 23, pp. 1073-1120

105 *Treatment of Chronic Nephritis. E. Romberg.
106 Experimental Syphilis in Rabbits. (Histopathologische Veränderungen bei der experimentellen Kaninchensyphilis.) P. Uhlenhuth, P. Mulzer and M. Koch.
107 *Immunization Against Tuberculosis by Dialysis from Sac of Killed Tubercle Bacilli. (Ueber Tuberkuloseschutzimpfung mittels toter, in Schilfröhrsäckchen eingeschlossener Tuberkelbazillen.) J. F. Heymans.
108 Improved Technics for Romanowsky Stain for Blood. (Einige moderne Romanowsky Blutfärbungen.) S. Szecsi.
109 *Roentgenoscopic Findings with Chronic Colon Spasm. (Die objektiven Symptome des chronischen Colospasmus.) G. Singer and G. Holzknecht.
110 Increased Elimination of the Uric Acid at Crisis in Pneumonia. (Ueber die erhöhte Harnsäureausscheidung bei der Krise der Pneumonie.) Y. Nukada.
111 Plastic Operation on Urethra Utilizing Saphenous Vein. (Ersatz eines Harnröhrendefektes durch die Vena saphena.) R. Mühsam.
112 Crude Coal Tar in Dermatology. (Anwendung des rohen Steinkohlenteers bei Hauterkrankungen.) E. Müller.
113 Mountain Air and Diatheses in Children. (Die kindlichen Diathesen und das alpine Hochgebirge.) A. v. Planta.
114 *Symposium on Roentgenotherapy of Goiter. (Therapeutische Wirkung der Röntgenstrahlen auf Struma und Morbus Basedowii.) Berger and M. Schwab.
115 *Prophylaxis of Scarlet Fever. (Zur Frage der Scharlachprophylaxe.) von Drigalski.

105. **Chronic Nephritis.**—Romberg concludes this postgraduate lecture on chronic nephritis with the remark that although we are not able to cure it, yet recent progress has made it possible to relieve the patient and ward off danger much more effectually than ever before. We have learned to spare the kidneys unnecessary work, especially sparing the pathologic element, while keeping the general condition at its possible best, and cautiously exercising the diseased organ, gradually training it to better functioning. The elimination of water and salt is more important for the organism as a whole than albumin, blood or tube-casts in the urine. The elimination of water and salt depends on the action of the heart, the absorption of water in the intestines and its elimination through the intestines, skin and lungs, as well as on kidney functioning. In treatment all measures should be avoided as a rule which induce marked fluctuations in the blood-pressure. In the diet the main point is moderation; meat up to 100 or 150 gm. a day can generally be allowed and the prejudice against red meat and eggs is unfounded. The total amount of fluid in any form during the twenty-four hours should not surpass two liters, and the amount should never be less than one-half liter. Too much fluid throws unnecessary work on the kidneys. He regards alcohol, especially beer, as unconditionally contra-indicated; vinegar, too, had better be dropped. Much salt should be avoided, but enough to render the food palatable should be taken as long as the kidneys are working fairly. Sweating procedures are useless and dangerous while the kidneys are still sufficient. The same is true of courses of mineral waters, although the latter may be indicated for certain complications. Persons with insufficient kidneys should never be sent to a dry, hot climate, like that of Egypt, from much farther north, although a milder climate in winter is an advantage. Von Hösslin has recently stated that sodium bicarbonate without much fluid reduces albuminuria, and Straub and Schlayer have called attention to a possible connection between the carbon-dioxid tension of the blood and the elimination of albumin in the urine. Treatment for syphilis should always be given a trial if there is the least cause for suspicion, especially with contracted kidney in the young. With edema or any signs that the kidneys are becoming insufficient, the patient must avoid

physical and mental exertion, he must stay in bed, and the output of water and salt should be recorded, the curve showing the progress up or down, the intake of salt accordingly restricted or not as indicated. The limit of tolerance varies widely in different patients, but the majority can take the ordinary daily average of 10 to 20 gm. salt without harm unless there is a tendency to edema. He warns against calomel in chronic nephritis, as it has an irritating action on the kidneys. Diuretics and digitalis sometimes act better when combined, and restriction of salt may not benefit until some kidney tonic is given at the same time or vice versa. Copious venesection may give great relief in severe uremia.

107. **Inoculation of Tubercle Bacilli in Sacs.**—Heymans has obtained encouraging results in his experimental inoculation of rabbits with killed tubercle bacilli in sacs introduced into the peritoneum. The sacs are made from a membrane obtained from reeds, and hold 1 gm. of the bacilli bodies. Substances dialyze through the sac and set up an action which immunized the animals in his experiments. He thinks this method of preventive and curative immunization is superior in many ways to all other technics to date. It may prove useful in vaccination against typhoid as it permits the introduction in the most harmless way of large amounts of killed bacilli. The reed sacs are less porous than collodion sacs, and are preferable for several other reasons.

109. **Motor Neuroses of the Colon.**—Singer and Holzknecht give the roentgenoscopic findings in a number of cases of spastic constipation and call attention to other objective findings in this condition. Such patients generally have a retracted abdomen with occasional protruding loops of intestine, especially at the sigmoid flexure, contraction of the sphincters, which close tight on the palpating finger, difficulty in introducing a sound into the rectum, and fragmented stool, which may be normal, constipated or diarrheic, with or without mucus or blood. Massage, exercise and electricity increase the disturbances, while belladonna, atropin, opium, warmth, relief from anxiety and sedatives generally relieve. Small doses given by the rectum are peculiarly efficient, as also mechanical dilatation of the lower bowel. Roentgenoscopy shows an alternating contraction and dilatation in the colon, atony at certain parts, and excessive motility of the upper third of the large intestine. The bismuth suspension is passed along so rapidly that it may reach the rectum in six hours; normally, in this period it reaches only the hepatic flexure at most.

114. **Roentgenotherapy of Goiter.**—Question-blanks were sent to a number of German clinicians asking for their experiences in this line. They have no favorable reports to make of roentgenotherapy for simple goiter and generally advise against it, but for exophthalmic goiter the majority regard it as fully equal to any other therapeutic method. The thyroid subsides under it, and likewise the specific Basedow symptoms, the exophthalmos, tachycardia, other symptoms on the part of the heart and nervous system, while the general health improves and the patients gain in weight. Krause urges routine histologic study of thyroids when they are removed or inspected at necropsy after exposures to the Roentgen rays.

115. **Prophylaxis of Scarlet Fever.**—Drigalski urges that the medical inspectors of schools should keep a special oversight of children recently recovered from scarlet fever. He found nephritis in thirty-five children who had apparently entirely recovered, among the 1,102 scarlet-fever children at Halle during the last four years. The nephritis was found almost invariably in children who had had no or very brief medical care.

Deutsche Zeitschrift für Chirurgie, Leipsic

May, CXV, Nos. 1-2, pp. 1-204

116 *Advantages and Wide Applicability of Momburg Belt Constriction for Hemostasis. (Die Momburgsche Blutleere.) A. Haehner.

117 *Non-Operative Injury of Thoracic Duct. (Die nicht operativ entstandene Verletzungen des Ductus thoracicus.) D. G. Zesas.

118 *Hyperemic Treatment for Tendon Sheath Phlegmons; 127 Cases. (Zur Klinik der Sehnenscheidenphlegmone unter bes. Berücksichtigung der Stauungsbehandlung.) W. Keppler.

119 *Sand-Bath Treatment of Infected Wounds. (Weitere Mitteilungen über die Saugbehandlung infizierter und infektionsverdächtiger Wunden im sterilen Sandbade.) A. Thies.

120 Incubation Period for Peritoneal Infection. (Weitere Untersuchungen über die Inkubationszeit nicht angesüchteten Keimmaterials bei der peritonealen Infektion.) G. Magnus.

116. **Hemostasis by Belt Constriction.**—Haehner devotes 48 pages to discussion of Momburg's method of hemostasis by winding a rubber tube around the waist, commending the simplicity of the method and its certainty and the fact that no assistance is required. He urges that a six-foot tube of the kind should always be in the first-aid box in emergency stations and army kits, and cites von Kamptz' two cases in which the patients' lives were undoubtedly saved by this measure after an accident. Another great advantage is that the hemorrhage is arrested without touching the wound; with other methods of hemostasis the wound is generally contaminated by measures to arrest the bleeding. The patient must be lying flat and the tube be wound as tight as possible, one turn over another, until the pulse in the femoral artery is no longer perceptible. Generally the femoral pulse stops after two or three turns; it is important to use as few turns as possible to obtain the desired effect. A constricting band is applied to each thigh beforehand to render less abrupt the changes in the circulation when the constricting belt is removed. Momburg advises at need to expel first the blood from the limbs with an Esmarch bandage. He warns expressly against raising the pelvis before applying the constricting belt. The method makes considerable demands on the heart and should not be attempted in case the cardiovascular apparatus is not sound. Its main field is for obstetric and traumatic hemorrhage and on the battle field. Patients with arteriosclerosis or exophthalmic goiter or when weakness of the heart from any cause is suspected should be excluded, and the constriction should always be as brief as possible. Haehner states that the experiences in several hundred surgical and obstetric cases now on record have fully established the feasibility of the method. Hoehne is experimenting with a splint laid over the ureter region on each side to prevent injury of the ureters during the constriction, but his results have not been conclusive to date. The various by-effects that have been observed were in persons whom Momburg would have excluded from the measure, or the technic was defective or the constriction was released too suddenly—Momburg has always warned that the circulation must be only very gradually restored. (The method was shown in an illustration in THE JOURNAL, Oct. 30, 1909, p. 1519.) Some persons find the constricting belt very painful while others do not seem to mind it much. A little morphin will obviate difficulty from this source. For operations, it may be well to wait until the patient is under the influence of the anesthetic before applying the tube. The tube from a gas stove can be used in an emergency.

117. **Non-Operative Injuries of the Thoracic Duct.**—Zesas has traced the literature on the subject back to 1663, and summarizes here the twenty-four cases he has found recorded. Twelve of the patients died from compression of the lungs or from inanition from loss of chyle. He does not advise puncture, as aspiration of the fluid leads only to reaccumulation. Thoracotomy with resection of ribs is preferable if the effusion recurs. He says that the closure of the wound in the duct is scarcely feasible; in Helferich's case the chyle ceased to accumulate after thoracotomy, while preceding punctures had seemed merely to maintain it.

118. **Phlegmons of Tendon Sheaths.**—Keppler thinks the time has now come for a detailed report of the experiences at the university clinic at Berlin, in charge of Bier, with his method of treating tendon sheath phlegmons by multiple small incisions and stasis hyperemia for twenty or twenty-two hours daily. He has been applying this method since 1905, and Keppler here reviews 127 cases in the last two and one-half years in which he has personally supervised its application. This material is reviewed and classified from various standpoints. Comparing the results with those of former methods confirms its advantages anew, he insists, as the best and least mutilating treatment known to date. Even if the ultimate outcome were not so favorable, the relief of pain by the stasis

hyperemia justifies its adoption in these cases. The functional results were exceptionally good; the earlier treatment was begun, the better the outcome.

119. **Sand Bath Treatment of Infected or Suspected Wounds.**—Thies utilizes the capillary attraction of fine sand sterilized by boiling for half an hour in a bag or steaming for an hour and a half. The part affected is kept in the dry sand for ten or twelve hours during the day with frequent intermissions, in some cases both day and night. The limb is placed in a long, deep pan without ends and one or three quarts of sand is poured over it, the patient shoveling up fresh sand over the lesion as the sand in contact becomes moistened with secretions. The limb can be moved freely in the sand bath as desired. A layer of gauze or chiffon over the lesion will keep the sand out of it. In some of his cases, Thiersch flaps all healed in place in the sand bath, without loss of one. He has found the method particularly useful for phlegmons of the hands or tendon sheaths, first releasing the pus with multiple small incisions. He gives the details of thirty-four cases in which he has applied the measure. He uses the same sand for two or three days unless there is much secretion, in which case he renews it daily. The dry sand keeps the wound dry without the necessity for changing dressings; it is much more effectual for the purpose than bolus alba or sponges. A disinfectant can be mixed with the sand if desired. (His first communication on the subject was summarized in THE JOURNAL, May 6, 1911, p. 1372.)

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June 9, VIII, No. 23, pp. 933-974

121 Constitutional Inferiority. (Die Konstitution als Grundlage von Krankheiten.) D. v. Hansemann.
122 Occult Perforation of Gastric Ulcer. (Ueber gedeckte Magenperforationen und über die Entstehung der penetrierenden Magengeschwüre.) J. Schnitzler.
123 Oculorecurrences in Syphilis After Salvarsan. (Ueber die syphilitischen Rezidive am Auge nach Salvarsanbehandlung.) O. Fehr.
124 Walking Tours for Children. (Einfluss gesteigerter Marschleistungen auf die Körperentwicklung in den Pubertätsjahren schwächlicher Kinder.) F. Meyer.
125 Tests of Liver Functioning. (Funktionsprüfung der Leber.) R. Ronbitschek.
126 Operations on Nose to Correct Deformity. (Korrektive Nasenoperationen.) E. Köhler.
127 Immunity to Diphtheria. (Aktive und passive Immunität bei Diphtheritis in der ärztlichen Praxis.) P. Dittrich.
128 Roentgenoscopy of Oxygen in the Tissues. (Die Darstellung der Sauerstofforte im tierischen Gewebe.) P. G. Unna.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXIV, Nos. 4-5, pp. 607-884. Last indexed April 27, p. 1320

129 *Acromegaly and Hypertrophic Bone and Joint Disease. (Zur Lehre von der Akromegalie und Osteoarthropathie hypertrophiante.) F. Schultze and B. Fischer.
130 Pathology of the Hypophysis Cerebri. R. Tölken.
131 Blood-Borne Infection of Follicles in the Appendix. (Experimentelle hämatogene Infektion der Lymphfollikel des Appendix.) H. Stoeber and W. Dahl.
132 The Liver and Pancreas in Experimental Chloroform Poisoning. (Zur Frage der zentralen Läppchennekrosen der Leber und deren etwaige Beziehungen zur Pankreasfettgewebsnekrose.) W. Hildebrandt.
133 *Results of Experimental Thymectomy. (Wirkung experimenteller Ausschaltung der Thymusdrüse.) H. Matti.
134 Collateral Arterial Circulation in the Kidney. (Experimenteller Beitrag zur Bildung arterieller Kollateralbahnen in der Niere.) K. Isobe.
135 Influence of the Thymus on Blood Production. (Untersuchungen über den Einfluss der Thymusdrüse auf die Blutbildung resp. das Blutbild.) F. Seiler.
136 Diagnosis of Gastric Cancer. (Zur Diagnose des Magencarcinoms.) M. Feurer.

129. **Acromegaly and Hypertrophic Osteo-Arthropathy.**—In the first of the cases reported by Schultze and Fischer the patient was a girl of 15 with a hypophysis tumor, acromegaly and partial obesity. The first symptoms had been observed at 11. In a second case the patient, a man of 56, succumbed to hemorrhage from a myoma in the stomach. He had complained of symptoms on the part of the stomach since a contusion of the region seven years before. Then the acromegaly developed and a tumor was found in the hypophysis. The adrenals in both cases were enormously enlarged, all the viscera having grown to unusual size, the adrenals to five times normal. Some other cases are compared with these and the etiology discussed, especially of the benign tumors in the hypophysis.

133. **Thymectomy.**—Matti devotes 155 pages to the description of his experimental research on the physiology and pathology of the thymus. The work was done at Basel and Bern, and it confirms the assumption of a close connection between exophthalmic goiter and persisting large thymus. The thymus and the thyroid seem to have the same, not antagonistic, functions and hyperfunctioning of both magnifies the evil from each.

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June 4, LIX, No. 23, pp. 1257-1304

137 *Dislocation of the Shoulder. (Die Distorsion des Schultergelenkes.) F. Lange.
138 Treatment of Flat-Foot. (Zur Plattfussfrage.) A. v. Baeyer.
139 Mixed Anesthesia in Otology and Rhinology. (Zur Pantopon-Skopolaminnarkose.) J. Fleischner.
140 Improved Technic for Mathieu Test of Stomach Functioning. (Eine neue Modifikation der Restbestimmung nach Mathieu-Rémond.) J. Grossmann.
141 Diphtheria at Berlin Public Hospital, 1910-11. K. Blühdorn.
142 Low Transverse Tracheotomy in Diphtheria. (Die Tracheotomia inferior mit kleinen querem Hautschnitt bei Diphtherie und ihre Nachbehandlung.) W. Leede.
143 Emergency Esophagotomy. (Dringliche Indikation zur Oesophagotomia mediana gleichzeitig als Beitrag zur Frage: Tracheotomia transversalis oder Tracheotomia longitudinalis mit transversalem Hautschnitt.) H. Hans.
144 Milk Hygiene in Rural District. (Zur Milchversorgung auf dem Lande.) A. Weber.
145 Familial and Hereditary Cataract. (Schichtstarbildung durch vier Generationen einer Familie.) R. Hilbert.
146 Disagreeable By-Effects with Tuberculin Treatment. (Unliebsame Vorkommnisse bei der Tuberkulinbehandlung.) F. Junker.
147 Reactions of the Blood-Serum. (Ueber die Reaktion des Blutserums bei normalen und pathologischen Zuständen.) F. Rolly. Commenced in No. 22.
148 Diagnostic Importance of Ocular Muscular Reactions. (Zur Bewertung der Augenmuskelreaktionen bei Labyrinthreizung und der Reaktionen bei elektrischen Kleinhirnreizungen nach experimentellen Untersuchungen am Affen.) W. Uffenorde. Commenced in No. 22.
149 The Physician's Certificate for Trauma Affecting the Skull. (Zur Unfallbegutachtung Schädelverletzter.) C. Hirsch. Commenced in No. 22.
150 *Necessity for Labeling Specially the Chemicals Used for Routine Roentgenoscopy. (Vorschlag einer Nomenklatur des Baryum sulfuricum für Roentgenzwecke.) G. Schwarz.

137. **Dislocation of the Shoulder.**—Lange calls attention to the pathognomonic contracture of the joint—extreme inward rotation—which may occur with sprains, dislocation or even with effusion or slight inflammation in the shoulder; the joint is abducted and pivoted forward by 30 or 40 degrees. This position is not due to the action of the peripheral part of the joint, the upper arm, but to torsion of the central part, the scapula. The swelling, atrophy of the deltoid and tenderness of the joint are important for differentiation. If only the region of the subacromial bursa is tender, the joint itself is probably not injured; tenderness of the entire anterior capsule speaks for dislocation. To bring the scapula into place, the patient should raise and abduct the arm until the scapula stands even with its mate. Then an assistant should hold the shoulder girdle firm while the passive movability is tested; if it proves difficult to lift the arm backward and twist it outward, the diagnosis of dislocation is certain. Treatment should aim to rest the joint and promote absorption of blood or effusion for a few days, and then efforts should be made to exercise the anterior capsule to ward off atrophy. He gives illustrations of the simple exercises which he has found best adapted for this; they are done for five minutes several times a day. The seated patient is fastened to the chair with a band passed over the shoulder and the lower rung of the chair, while a second band below the axillæ fastens the trunk to the back of the chair. The arm is drawn backward by a loop passing around the arm above the elbow, with which a weight is drawn up over a pulley some distance to the rear, on a level with the top of the patient's head. This combats the tendency to inward rotation. Another exercise is with the pulley on a level with the elbow and the loop passed over the wrist, the arm tied back above the elbow to the back of the chair.

150. **Prophylaxis of Mishaps in Roentgen-Ray Work.**—Schwarz proposes that the barium sulphate which is proving such an important aid in roentgenoscopy, should be given some special name to distinguish it so that poisoning cannot occur from mistakes in dispensing it. The recent fatal poisoning from barium sulphid (BaS) which was administered by mistake for the non-toxic barium sulphate ($BaSO_4$) illustrates the necessity for giving the chemical used in skiagraphy some distinctive and unmistakable name. He suggests "skiabaryta," from the Greek *skia*, shadow, and that it should always be stained bright yellow. Something of the kind must be insisted

on at once before any further fatalities occur. One was reported from Germany about six months ago; the latest mentioned above occurred at Prague (Jurasz).

Therapie der Gegenwart, Berlin

June, LIII, No. 6, pp. 241-288

151 *Duodenal Ulcer. (Zur Diagnose und Therapie des Ulcus duodeni.) A. Albu.
152 Digitalis Preparations. (Die hohe Bedeutung der Folia Dig. titrata und ihre Vergleichung mit andern Digitalispräparaten.) C. E. Focke. Commenced in No. 5.
153 Treatment of Flat-Foot by the General Practitioner. (Zur Plattfussbehandlung durch den praktischen Arzt.) P. Lengemann.
154 *Endonasal Treatment of Eye Disease. (Ueber die endonasale Behandlung von Augenerkrankungen auf Grund der neueren endonasalen Operationsmethoden.) P. Stenger.

151. **Duodenal Ulcer.**—Albu's advice is practically the same as in the recent article on the subject in THE JOURNAL, June 22, p. 1943. He emphasizes, however, that duodenal ulcer is of more frequent occurrence than hitherto recognized, and remarks that the clinician and the practitioner unfortunately have to make their diagnosis without direct inspection, while the surgeon can wait until the organ is exposed. It does not seem that the diagnosis has been much promoted by surgical autopsies; nearly every case manifests itself in a different way, with different peculiarities. Only one feature seems to be common to all, namely, the periodic recurrences of intense abdominal pain. When the pain develops three or four hours after a meal it can be ascribed to duodenal ulcer only when the pain is intense and keeps up for hours, especially when it recurs often at night and may, sometimes but not always, be relieved by a little food. Similar symptoms occur with hyperchlorhydria and nervous hyperacidity except that the pains are not so intense. Albu also calls attention to the rapid loss of flesh, such as is witnessed otherwise only with malignant disease. Intermittent motor insufficiency is pathognomonic, he says, when it occurs. The cause is a reflex spasm of the pylorus; it may last for days or weeks, but when the contraction of the pylorus subsides, the pains and the retention of food in the stomach disappear with it and the patients may have peace for weeks and months. In one of his cases, a physician 46 years old had complained for three years of gastric distress, keeping up for four or six weeks, after errors in diet. He was much emaciated and had an acid taste in his mouth, with eructations. No objective findings could be obtained until finally a tender point was found to the right of the umbilicus, with 100 c.c. of solid food content in the fasting stomach, free hydrochloric acid, occult blood in the stool, and gastric dilatation. The assumption of a duodenal ulcer was confirmed by the operation, as in two other cases in which the diagnosis was based likewise on the intermittent motor insufficiency. Spasm of the pylorus seems to occur more readily with duodenal than with gastric ulcer. Chronic recurring cholecystitis may induce a similar picture, as also the gastric crises of tabes, and neurasthenia of the stomach. The latter may deceptively simulate duodenal ulcer and long study of the case may be necessary to exclude it. Albu protests against the prevalent idea that patients with a chronic affection of the kind must be turned over to the surgeon at once, before a systematic, energetic course of internal treatment. Drugs alone are not able to cure duodenal ulcer, but this can often be accomplished by several weeks of bed rest, continuous hot applications and a simple diet. He reports the complete cure of a man of 49 who had complained of digestive disturbances at intervals for nine years. The last attack of pain and vomiting had lasted for four weeks; the fasting stomach contained 30 c.c. of food and fluid, but there was no blood in the stool. Under three weeks of bed rest and other internal measures, all symptoms subsided, and there has been no trace of recurrence during the five months to date. Gastroenterostomy alone does not seem to be the logical treatment unless the pylorus is excluded at the same time; better perhaps is the removal of the ulcerated region by transverse resection. This removes at the same time the cause for the reflex irritation of the pylorus. He adds that two male patients in the prime of life, operated on recently for duodenal ulcer by gastro-enterostomy, died in consequence, one from postoperative pneumonia and the other from recurring hemorrhages.

154. **Endonasal Treatment of Eye Disease.**—Stenger comments on the recently acquired appreciation of the causal connection between nose and eye disease, and the possibility of curing the latter by appropriate operations on the nose or its sinuses. Besides the direct connection, there may be reflex nervous irritation; acute inflammation in the orbit, in the lacrimal canal, glaucoma, cataract and optic neuritis may all have a causal connection with some nasal trouble, as also disturbances in the optic nerve. In one of the cases reported a young woman found vision declining during the last five weeks, with headache on the left side. A chronic ethmoidal sinusitis was found and treated and in three weeks normal vision was restored. In this and some other cases a severe coryza had preceded by two months the visual disturbances and scotoma, while normal conditions were restored by treatment of ethmoidal sinusitis. A child under four had suppuration of both ears and became totally blind in the course of three weeks. The nose seemed normal, except for adenoid vegetations and swelling of the mucosa. No benefit was observed under four days of conservative treatment and the diagnosis of ethmoidal sinusitis was made by exclusion. The prompt benefit after resection of the middle turbinate bone and clearing out of the ethmoidal sinus confirmed its correctness. The sudden onset of the blindness in these cases, with fever and headache, gave the clue to the source of the trouble. In all his cases of glaucoma he always found the nose pathologic on that side, and he is convinced that incipient glaucoma might often be benefited by prompt correction of pathologic conditions in the nose. He insists in conclusion that the nose should not be left apart in an exclusive specialty, but should be regarded as important for the organism as a whole. Even the functioning of the heart and lungs depends on the normal physiologic functioning of the nose.

Wiener klinische Wochenschrift, Vienna

June 6, XXV, No. 23, pp. 867-906

155 Carcinoma Cells and Carcinoma Reaction. R. Kraus.
156 *Influence of Salvarsan on Wassermann Reaction. (Einfluss der Salvarsanbehandlung auf die Wassermannsche Reaktion.) R. Müller.
157 Eosinophilia with Glaucoma. T. Kleczkowski.
158 Duodenal Diverticulum. T. Bauer.
159 "Abdominal Angina." E. Hoke.
160 General Diagnosis in Relation to Laryngology and Rhinology. (Die Laryngologie und Rhinologie in ihren Beziehungen zur allgemeinen Diagnostik.) O. Kahler.
161 History of Diabetic Coma. (Zur Vorgeschichte des Coma diabeticum.) E. Ebstein.

156. **Influence of Salvarsan on the Wassermann Reaction.**—This communication from the dermatologic clinic at Vienna in charge of Finger was read at the recent International Congress for Dermatology. In 144 cases of syphilis in its secondary phase, eighty-five of the patients were kept under observation for months after salvarsan treatment. The Wassermann test gave a negative response in from four to eight weeks after the injections in the majority of cases, but in more than half of these the reaction became positive again from three to twelve months later. In some cases the disease ran a malignant course with a constantly negative Wassermann reaction. One patient had been persistently treated for over two years with every known means of combating syphilis, but has never been free from manifestations of the disease for a single week and yet the Wassermann test was always negative throughout. In another malignant case mercury proved ineffectual, but under salvarsan the manifestations of the syphilis temporarily subsided, while at the same time the previously constantly negative Wassermann findings became positive. Finger explains his fifteen cases of neurorecurrence as the result of primary injury of the capillaries by the salvarsan; this creates a point of lessened resistance which invites the still lingering spirochetes to settle there. The experiences related suggest on the whole that although salvarsan has a more rapid action on the syphilis than mercury, yet it does not ensure a permanent cure. In two children recently examined nearly two years after treatment of one with mercury and of the other with salvarsan, the seroreaction is now strongly positive in both. In another family, four children between 9 and 14 were infected all at the same time by an older sister. Two were treated with

mercury and two with salvarsan. The manifestations of the disease were remarkably alike in all; they rapidly subsided and the seroreaction became negative under salvarsan, while they subsided more slowly and the seroreaction persisted under the mercury. Two months later all the four children had an apparently identical recurrence and the seroreactions were positive again. Under repetition of the former treatment the same phenomena occurred as before, and once more, a few months later, the same course and phenomena were observed anew, alike in both the mercury and the salvarsan cases.

Zeitschrift für Urologie, Berlin

June, VI, No. 6, pp. 461-540

162 Colon-Bacillus Infection of the Urinary Apparatus. (Experimentelle und klinische Studie der Colon Bacillus Infektion des Harnsystems.) I. S. Koll (Chicago).
163 Misleading Case of Tuberculosis of Kidney. (Ein seltener Fall von Nierentuberkulose.) A. Heymann.

Zentralblatt für Chirurgie, Leipsic

June 8, XXXIX, No. 23, pp. 769-808

164 *Operative Treatment of Fistulas into Stomach or Intestine. (Zum operativen Verschluss der Magen- und Darmfistel.) V. v. Hacker.
165 *Aluminum Clips for Ligating Arteries. (Eine Ligaturklemme für Aluminumagraffen.) E. Schepelmann.
166 *Inflatable Air Cushion for Raising Trunk for Gall-Bladder and Other Operations. (Einfache Vorrichtung zur Lagerung des Kranken bei Gallenblasen- usw. Operation.) Schultze.

164. Operative Closure of Rebellious Fistulas.—Von Hacker gives an illustration of the technic with which he promptly healed up two old and chronic fistulas which had resisted all other measures. Both were on the median line, opening into the stomach, one of over one and the other over two years' standing. He excised the exuberant "lips" of the fistula and made a short incision 1 cm. above and below the round hole thus left. Through these incisions he ran a silver wire loop under the fascia on each side, thus encircling the hole, about 1 cm. distant, and brought each end of the wire out separately through the skin some distance to right or left of the point above and below where the two loops crossed. The ends of the wire were each tied over a metal plate and bead, and traction on the loops puckered up the fistula mouth, quite obliterating it. He has applied the same technic with equally prompt success in closing an artificial anus in the cecum.

165. Ligating Clamps for Arteries.—Schepelmann gives an illustrated description of his tiny, nearly triangular, aluminum clamps. The clamp is fitted over the artery with long slender forceps which automatically clamp it and it can thus close the lumen even in the blind depths of a cavity where it is almost impossible to throw a ligature around a vessel.

166. Technic for Cholelithiasis Operations.—An air cushion folded flat lies under the patient's lumbar region; the base of the cushion is flat and solid. It can be inflated with a bicycle pump to raise the lower part of the trunk a foot or more, with ease and no discomfort for the patient.

Zentralblatt für Gynäkologie, Leipsic

June 8, XXXVI, No. 23, pp. 729-760

167 Momburg Belt Versus Instrumental Hemostasis. (Momburg-'scher Schlauch oder Tourniquet?) W. Sigwart.
168 Operative Treatment of Post-Partum Hemorrhage. (Zur Operativen Behandlung der Post partum-Blutungen.) A. Labhart.
169 Hydrorrhea During Pregnancy. (Ueber Hydrorrhoea gravidarum amnialis bei intraamnialer Entwicklung der Frucht.) W. Beckmann.

Zentralblatt für innere Medizin, Leipsic

June 8, XXXIII, No. 23, pp. 573-596

170 Destructive Action of Radium Emanation on Xanthin Bodies. (Die Zersetzung von Oxypurinen durch Radiumemanation.) P. Mesernitsky.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 4, XXXIII, No. 67, pp. 705-712

171 *Trauma as Factor in Pulmonary Tuberculosis. (Il trauma come fattore di tubercolosi polmonare.) T. Oreste.
172 Pneumonia in Children. (Sulla diagnosi e prognosi della polmonite infantile.) Mouriquand and Genty.

June 6, No. 68, pp. 713-720

173 *Treatment of Fistula of Duct of Steno. (Contributo alla cura delle fistole del dotto di Stenone.) G. Giovannetti.

June 9, No. 69, pp. 721-736

174 Phenol in Treatment of Anthrax. (10 casi di carbonchio curati con le inlezioni di acido fenico puro.) U. Ragusa.

171. Trauma as a Factor in Pulmonary Tuberculosis.—Oreste's patient was a man of 30 who had been kicked in the chest by a horse after which a pulmonary process developed with tubercle bacilli in the sputum and slight evening fever. Six months after the accident an abscess formed in the subcutaneous tissue of the chest wall and after release of 1.5 liters of pus the symptoms gradually subsided until there was no further trace of anything wrong in the lungs. Oreste explains the abscess as the direct work of the tubercle bacilli which had been developing since the trauma, the suppuration coming on a few days after a five-hour ride with much jolting over rough roads. The jolting, he thinks, caused conditions inducing the sudden formation of the abscess; there had been no signs of it when the patient had been examined two days before. The case confirms anew the mild, curable character of traumatic pulmonary tuberculosis.

173. Treatment of Fistula in the Duct of Steno.—Giovannetti reports a case of postoperative fistula in which conditions were rapidlly restored to approximately normal after he introduced a cannula into the duct from within the mouth draining the saliva into the mouth and thus permitting the fistula to heal from without inward.

Policlinico, Rome

June 2, XIX, No. 23, pp. 817-856

175 Operative Injury of Ureters. (Patologia e clinica delle lesioni chirurgische dell'uretere.) D. Leonardo. Commenced in No. 22.
176 Abortive Diphtheric Angina. (Angine difteriche fruste.) R. Petrucci.

Riforma Medica, Naples

May 25, XXVIII, No. 21, pp. 561-588

177 Abscess in the Liver. (L'ascesso del fegato.) D. Giordano.

June 1, No. 22, pp. 589-616

178 *Lymphadenitis. (Sulla diagnosi delle tumefazioni delle linfoglandole.) A. Alhaique.
179 Abdominal Contusions. (Le contusioni dell'addome con rottura sottocutanea della parete.) M. Dardanelli.

178. Differentiation of Lymphadenitis.—Alhaique reports a case to show that microscopic examination of an excised scrap may prove the only means to differentiate lymphadenitis in the neck. The patient was a woman of 36 and there were features suggesting that the tumefaction low at the side of the neck might have been tuberculous, syphilitic, or due to actinomycosis or ordinary inflammation. The microscope revealed the structure of a metastatic carcinoma. Another metastatic tumor developed later in the liver, but the primary tumor has given no signs to date.

Semana Medica, Buenos Aires

May 9, XIX, No. 19, pp. 869-912

180 Conservative Operative Treatment of Uterine Fibroma. (Cirugia conservadora en los fibromas del utero.) O. L. Bottaro.
181 Operative Treatment of Hemorrhoids. (Tratamiento quirurgico de las hemorroides—procedimiento del Dr. N. Repetto.) A. Kuperman.

Hospitalstidende, Copenhagen

June 5, LV, No. 23, pp. 637-668

182 Experimental Poliomyelitis in Monkeys. II. (Experimentelle Undersøgelser over Poliomyelitis.) O. Thomsen.

Norsk Magazin for Lægevidenskaben, Christiania

June, LXXIII, No. 6, pp. 809-960

183 Suppurative Middle Ear Disease. (Den tympanogene suppurative labyrintit.—Komplikationer, prognose og behandling.) V. Uchermann.
184 Case of Primary Sarcomatosis of the Peritoneum. K. Motzfeldt.
185 Traumatic Injuries of the Bone Aside from Fractures. (Traumatisk bendannelse.) K. Motzfeldt.
186 Complications of Appendicitis. (Appendicit med komplikationer samt Appendicit i forhold til gynækologiske lidelser.) H. Natvig.
187 Anaphylaxis. M. v. Krogh.
188 Prognosis of Psychoses in the Young. (Prognosen for juvenile psykoser behandlet i Kristiania kommunale sindssykeasyl 1849-1900.) A. Horne.
189 Physiology of Acetone Bodies. (Om acetonlegemernes fysiologi.) H. C. Geelmuyden.

Ugeskrift for Læger, Copenhagen

June 6, LXXIV, No. 23, pp. 859-888

190 Vaccine Therapy of Staphylococcus Infection. (Videre Erfaringer om Vakcinebehandling af Stafylokokildelser.) V. Jensen.